

Contract No. 14-06-400-5033
Conformed Copy

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

GLEN CANYON UNIT
COLORADO RIVER STORAGE PROJECT
CONTRACT FOR WATER SERVICE FROM LAKE POWELL

THIS CONTRACT, made this 17th day of January, 1969, pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Federal Reclamation Laws and particularly pursuant to the Act of Congress approved April 11, 1956 (70 Stat. 105), between THE UNITED STATES OF AMERICA, hereinafter referred to as the United States, acting through the Secretary of the Interior, hereinafter referred to as the Secretary and represented by the Regional Director, Region 4, hereinafter referred to as the Contracting Officer and the SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT, an agricultural improvement district organized under the laws of the State of Arizona, hereinafter referred to as the Contractor.

WITNESSETH:

WHEREAS, the following statements are made in explanation:

(a) The United States has constructed Glen Canyon Dam and Reservoir forming Lake Powell as a part of the Colorado River Storage Project, hereinafter referred to as Storage Project, and water service from Lake Powell can be furnished from Arizona's apportionment of Upper Basin water under the Upper Colorado River Basin Compact for industrial purposes pursuant to Federal Reclamation Law.

RATES, TAXES AND PROJECT
ECONOMICS

(b) The Contractor needs water service from Lake Powell for the operation of a coal fired steam electric generating plant which is planned to consist of three 750mw or three nominally 800mw rated generating units herein referred to as First Unit, Second Unit and Third Unit, and related facilities planned for construction in Arizona, said plant hereinafter referred to as Navajo Power Project.

(c) The Act of Congress approved September 30, 1968, P.L. 90-537 (82 Stat. 885) known as Colorado River Basin Project Act authorizes the United States to participate in a thermal-electric development to supply the need for power for the Central Arizona Project and the Contractor is agreeable to such participation.

NOW, THEREFORE, in consideration of the mutual and dependent covenants herein contained, the parties hereto agree as follows:

TERM OF CONTRACT

1. This contract shall be effective on the date first above written and shall remain in effect until December 31, 2016, or until forty (40) years from the date water is first taken hereunder, whichever occurs first.

RENEWAL OF CONTRACT

2. The Contractor shall have the right to renew this contract for one period of not to exceed twenty (20) years by giving the United States one (1) year's written notice prior to the end of the initial period, and Contractor shall have the right to renew the contract for additional periods of not to exceed forty (40) years each by giving the United States one (1) year's written notice prior to the end of

the then existing period. The initial renewal shall be subject to renegotiation only of the charges set forth herein giving consideration to the circumstances prevailing at the time of renewal as provided in the Act of June 21, 1963 (P. L. 88-44; 77 Stat. 66), and any renewal or renewals after the initial twenty (20)-year renewal shall be on terms and conditions mutually agreeable to the parties pursuant to the provisions of the said Act.

TERMINATION OF CONTRACT

3. This contract or any renewal thereof pursuant to Article 2 may be terminated:

(a) By the United States upon failure of the Contractor to perform its obligations under this contract. The United States will notify the Contractor in writing of its intention to terminate this agreement which notice shall specify each failure of the Contractor, and shall further provide that the Contractor may, within a one hundred twenty (120)-day period from the date of said notice, present the Secretary a detailed program to correct such deficiencies and the Secretary shall accept such program subject to such conditions as he may reasonably impose, and thereby waive the termination notice. No termination procedure will be initiated for issues in dispute and subject to arbitration as provided in Article 17 while such arbitration proceedings are pending or during the period specified in the arbitration decision for correcting the deficiencies.

(b) By the Contractor upon advanced written notice of at least two (2) years prior to the requested termination date.

NON-USE OF WATER

4. The United States shall have the right to withdraw from this contract water service for the quantities of water for which facilities are not constructed to use such water in accordance with the schedule in Article 7. This right to withdraw water service shall be exercised only if the Contractor has failed to proceed diligently in completion of its project as determined by the Contracting Officer; provided, that in no event shall such withdrawal be made before December 31, 1978, as to the first unit; December 31, 1979, as to the second unit, and December 31, 1980, as to the third unit. After such withdrawal, the Contractor shall have no further payment obligation with respect to the water service withdrawn.

CONSTRUCTION AND OPERATION OF FACILITIES

5. All pumps, pipelines, storage tanks, reservoirs, flood control and wasteway canals, waste area dams and reservoirs and other facilities required to take, measure and convey water from Lake Powell to points of use, and to return water to Lake Powell, or to dispose of wastes from points of use hereinafter collectively referred to as facilities, shall be constructed or installed, operated and maintained by the Contractor at its sole expense.

AVAILABILITY OF WATER SERVICE

6. (a) The water contracted for herein is a part of the water apportioned to the State of Arizona under provisions of Article III, Section (a)(1) of the Upper Colorado River Basin Compact (Act of April 6, 1949; 63 Stat. 31).

(b) Contractor and the United States agree that the United States may acquire a capacity entitlement in the Navajo Power Project for the pumping power requirements of the Central Arizona Project upon the terms and conditions set forth in the Colorado River Basin Project Act.

(c) The United States will furnish the Contractor water service during the term of this contract by permitting the Contractor to divert from Lake Powell water annually in the amounts specified in Article 7 at such times as best suits the Contractor's needs at the location established in the rights granted the Contractor pursuant to Section 10 of the Reclamation Project Act of 1939, and the Contractor shall pay for the water service as provided in Article 8. It is recognized that pending completion of preliminary engineering and design studies, the location of the diversion works and works for the return of water cannot be determined and the Contractor and Contracting Officer shall cooperate in obtaining locations therefor. The water service furnished shall be used by the Contractor only for thermal generation of electric energy and all other purposes related to the operation of the Navajo Power Project including mining and coal transportation and ash disposal. The Contractor shall have no holdover storage rights in Lake Powell from year to year, and relinquishes its claim to any annual water service not utilized by December 31 of each year. Any water purchased hereunder that is not called for by December 31 of each year shall become part of the following year's Storage Project water supply and be available for all Storage Project

purposes in such year. It is understood and agreed that any sale, gift, delivery or other disposition of the whole or any part of said water by the Contractor to third parties shall be done exclusively by an assignment of the Contractor's rights and obligations as provided in Article 25.

WATER SCHEDULE

7. (a) The Contractor's right to water service from Lake Powell during the term of this contract shall be in accordance with the following schedule:

<u>Year</u>	<u>Acre-Feet</u>
1974	15,000
1975	30,000
1976	40,000

and for each successive year thereafter during the term of this contract, provided that the difference between the amounts of water diverted under this contract and the amounts of water returned, both measured in a manner approved by the Contracting Officer, shall not exceed 34,100 acre-feet in any calendar year. If the Secretary determines there is additional water for consumptive use which the United States may make available to Contractor under this contract, the parties agree to amend this contract by increasing the 34,100 acre-feet set forth in this subarticle(a) and Article 9 by the amount of such additional water.

(b) The Contractor may accelerate the water schedule contained in this article by six (6) months' written notice to the

United States.

(c) The Contractor shall have the right to permanently relinquish all or a portion of its right to water service provided by this contract by two (2) years' written notice to the United States stating the quantity of water service to be relinquished. In the event of such relinquishment, Contractor shall have no further obligation to pay for the water so relinquished.

RATE AND METHOD OF PAYMENT

8. (a) The Contractor shall pay for water service hereunder at the rate of Seven Dollars (\$7.00) per acre-foot as scheduled in Article 7 or as the schedule may be accelerated or partially relinquished as provided in said article, provided that any water service after the termination of the initial term of this contract shall be in accordance with the renewal contract negotiated pursuant to Article 2. Payment shall be made quarterly in advance in four (4) equal payments on January 1, April 1, July 1 and October 1 of each year commencing with the quarter in which water service is first scheduled hereunder, or as such schedule may be modified; provided, however, that the Contractor shall not take any water from Lake Powell for which the Contractor has not paid for in advance. Should there be any curtailment in water service pursuant to the provisions of Articles 4, 7(c), 12, or 19 a proportionate adjustment in payments required will be made.

(b) The Contractor shall pay to the United States on execution of this contract and thereafter each year on the anniversary of the effective date of this contract, an annual "readiness to serve" charge of thirty cents (30¢) per acre-foot each year for all contracted water for which the Contractor is not paying the \$7.00 per acre-foot annual charge. This charge shall be an earnest money deposit to secure and reserve for the Contractor the right to water service

provided in this contract. The accumulated earnest money deposits on water for which the Contractor commences paying at the \$7.00 rate shall be credited to the first payment due on such water. Should the contract be terminated in whole or in part for any reason, the remaining uncredited earnest money deposits for such terminated water service shall become the property of the United States.

ALTERNATIVE WATER SERVICE AND PAYMENT FOR FLOW
THROUGH COOLING OF UNIT

9. The Contractor anticipates constructing three units of 750 MW or 800 MW nominal capacity each with cooling towers for each unit. The Contractor may elect to construct one of these units to be cooled by a "flow through" method whereby the cooling water diverted is returned to Lake Powell after use provided that the total depletions under this contract will not exceed 34,100 acre-feet. In the event of such election, Contractor shall be permitted to divert a maximum of 30,000 acre-feet per annum to serve the two units having cooling towers with payment therefor as provided in Article 8. Contractor may also divert additional quantities of water as may be necessary to operate the "flow through" unit, provided the cooling water for said "flow through" unit is returned to Lake Powell. Contractor shall pay \$105,000 annually in quarterly payments as provided in Article 8(a), as payment for the water diverted to the "flow through" unit. Designs and plans for the diversion and return of water utilized in the "flow through" unit shall be subject to approval of the Secretary as provided in Article 15(a).

INTEREST UPON DELINQUENCY IN PAYMENT

10. Upon each charge to be paid by the Contractor to the United States pursuant to this contract which shall remain unpaid after the same shall become due and payable, there shall be imposed interest at the rate of one-half of one percent (1/2%) per month of the amount

of such delinquent charge from and after the date when the same became due and until paid, and the Contractor hereby agrees to pay such interest; provided, that no interest shall be charged to the Contractor unless such delinquency continues for more than thirty (30) days; provided, further, that the United States reserves the right to withhold delivery of water at any time the Contractor is delinquent in payment beyond thirty (30) days.

MEASUREMENT AND RESPONSIBILITY FOR DISTRIBUTION

11. (a) The water to be furnished to the Contractor and to be returned by the Contractor to Lake Powell will be measured, delivered and returned by facilities constructed, operated, and maintained by the Contractor, as approved by the United States and such measurement, delivery and return facilities shall be accessible for inspection at all reasonable times by proper representatives of the United States. The Contractor agrees at its own expense to make any necessary arrangements for transportation of such water from Lake Powell to the place of use.

(b) The United States shall not be responsible for the control, carriage, handling, use or disposal of water furnished the Contractor hereunder.

WATER SERVICE SUBJECT TO COMPACTS, ACTS AND TREATY

12. This contract and all water service pursuant thereto shall be subject to and controlled by the applicable provisions of the Colorado River Compact dated November 24, 1922, and proclaimed by the President of the United States, June 25, 1929, the Boulder Canyon Project Act approved December 21, 1928, the Boulder Canyon Project Adjustment Act of July 19, 1940, the Upper Colorado River Basin Compact dated October 11, 1948, and the Mexican Water Treaty of February 3, 1944. In the event the amount of water service hereunder is required to be curtailed under and by reason of the provisions of the foregoing acts, no liability shall accrue against the United States, its officers,

agents or employees for any damage direct or indirect arising from such curtailment.

MAINTENANCE OF WATER LEVELS IN LAKE POWELL

13. The United States will normally operate Lake Powell so that the water level is maintained above elevation 3490 feet above mean sea level. However, the United States shall not be responsible for the maintenance of any particular water level in Lake Powell in order to permit the Contractor to take water therefrom through the facilities which it installs in accordance with Article 5. Charges shall be due and payable as provided in Article 8 irrespective of the Contractor's inability to take the water except that if the water level drops below elevation 3490' and the Contractor is unable to withdraw water, the annual payments referred to in Article 8 will be proportionately adjusted to reflect the quantity of water service unavailable to the Contractor.

NONRESPONSIBILITY OF THE UNITED STATES
FOR QUALITY OF WATER

14. The operation and maintenance of Storage Project facilities and the construction of new storage facilities for the provision of Storage Project water under this contract shall be performed in such a manner as is practicable to maintain the quality of raw water to be furnished hereunder. The United States is under no obligation to construct or furnish water treatment facilities to maintain or to better the quality of water except to the extent such facilities are expressly referred to elsewhere in this contract as part of the Storage Project facilities to be constructed by the

United States pursuant to Reclamation Law or as otherwise required by law. The United States is pursuing a program of water quality control as a National policy pursuant to the Federal Water Quality Act of 1965 and other similar legislation, including the establishment of and compliance with water quality standards, and will actively promote, support, and encourage the improvement of quality of water furnished hereunder. The Contractor, however, agrees that the United States assumes no liability should the water furnished hereunder be unsuitable for the Contractor's purposes.

WATER POLLUTION CONTROL

15. (a) The Contractor shall cause to be installed and diligently operated as part of the plant facilities, waste water, waste material and sewage control and disposal facilities, the design for which has been first approved by the Secretary. Plans for waste water, waste material and sewage disposal shall be subject to written approval by the Secretary in advance of construction, installation or major modification of facilities for these purposes. In the event agreement cannot be reached on such plan or facilities, the matter shall be submitted to arbitration in accordance with the provisions of Article 17.

(b) The Contractor shall have the right to return water from the Navajo Power Project to Lake Powell at locations and under measurement procedures approved by the Secretary so long as the temperature of such water shall not average more than 90° F., for any 24-hour period.

(c) Nothing herein shall relieve the Contractor from complying with all valid applicable water pollution control laws and regulations under Federal, State or County jurisdiction now or hereafter in force.

AIR POLLUTION CONTROL

16. (a) To minimize smoke, fly ash, and dust in stack emissions, the Contractor shall cause to be installed and diligently operated as part of the Navajo Power Project facilities, equipment employing the most effective, commercially proven electrostatic concept or other equally effective and acceptable equipment available under the technology known at the time of design of said facilities. Such air pollution control equipment shall be operated so as to remove not less than ninety-seven percent (97%) of the particulate matter in the stack emissions in each month and not less than ninety-six percent (96%) thereof in any twenty-four (24)-hour period, unless uncontrollable forces prevent such operation. Designs and plans for the air pollution control equipment, stack and other plant features that may affect air pollution, and facilities for control and disposal of waste or residue from burned fuel, shall be subject to written approval by the Secretary in advance of construction, installation, removal, or major modification thereof; and provided that the Secretary's approval shall not be deemed by implication or otherwise, to relieve the Contractor of any obligation it has assumed under this contract. From time to time, but not less often than once in every ten (10) years, the designated representatives of the Secretary and the Contractor will meet to review technological advances in air pollution control equipment and mutually weigh and decide upon the feasibility of installing additional equipment or modifying existing equipment in the plant facilities, taking into account costs as well as benefits of improved air

pollution control. In the event agreement cannot be reached on the aforesaid designs, plans, equipment or features or the modification or supplementation thereof, or the feasibility of installing additional equipment or modifying existing equipment, or the Contractor's compliance with the air pollution requirements, the matter shall be submitted to arbitration in accordance with the provisions of Article 17.

(b) In the operation of the Navajo Power Project, the Contractor will make or cause to be made such daily tests and measurements and keep or cause to be kept such records as will enable the Contractor to make accurate and complete reports to the Secretary relating to the operation and efficiency of the air pollution control equipment. Said reports shall be furnished to the Secretary not less often than once in each calendar year. Continuous recording equipment will be calibrated against tests performed in conformance with American Society of Mechanical Engineers (ASME) Test Procedures for Determining Dust Concentration in a Gas Stream unless some other procedure for making such tests and measurements may be mutually agreed upon. Such test procedures will be conducted at least every six (6) months. Contractor shall also furnish the Secretary with monthly reports showing the average monthly ash and sulphur content of the coal used.

(c) During normal working hours, representatives of the Secretary shall have access to, the right to inspect, and to copy, all records relating to air pollution from the plant facilities, and such representatives shall have the right to enter upon and inspect

such plant facilities and all parts thereof and appurtenances thereto.

(d) During the initial term of this contract, as provided in Article 1, the Navajo Power Project shall be fueled with coal having no greater sulphur and ash content by weight than 1.5 percent and 14.5 percent on a dry basis, respectively, unless otherwise approved, in writing, by the Contracting Officer. It is understood and agreed that natural gas and oil may be used as ignition fuel and as auxiliary fuel in operating the Navajo Power Project.

(e) Nothing herein shall be construed to relieve the water user from complying with all valid, applicable air pollution control laws and regulations under Federal or State laws now or hereafter in force.

ARBITRATION

17. Whenever a controversy arises as to which arbitration is provided for and such controversy cannot be resolved by the Secretary and the Contractor, either of said parties by written notice to the other may require such controversy to be submitted to arbitration. Within thirty (30) days from the date of the notice, the Secretary and the Contractor shall each name one arbitrator and the two arbitrators so selected shall within sixty (60) days from the date of said notice select a third arbitrator. In the event that either party has not appointed its arbitrator within the specified thirty (30)-day period, then the other party⁴ may make application to the appropriate United States District Court for Arizona for the appointment of an arbitrator for such party. In the event of the

failure of the two arbitrators to select the third arbitrator either the Secretary or the Contractor may make application to the appropriate United States District Court for Arizona for the appointment of the third arbitrator substantially in accord with the procedure provided in the Federal Arbitration Act (9 U.S.C.A. 1). It is understood and agreed that the Secretary and the Contractor shall each bear the costs and expenses of its respective arbitrator, and the cost and expense of the third arbitrator together with all other costs and expenses incident to said arbitration shall be shared equally by the parties. The decision of any two of the three arbitrators shall be a valid and binding award of the arbitration.

UNCONTROLLABLE FORCES

18. Neither party shall be considered to be in default in respect to any obligation hereunder, if prevented from fulfilling such obligation by reason of uncontrollable forces, the term "uncontrollable forces" being deemed for the purposes of this contract, to mean any cause beyond the control of the party affected, including, but not limited to, drouth, failure of facilities, flood, earthquake, storm, lightning, fire, epidemic, war, riot, civil disturbance, labor disturbance, sabotage, and restraint by court or public authority, which by exercise of due diligence and foresight, such party could not reasonably have been expected to avoid. Either party rendered unable to fulfill any obligation by reason of uncontrollable forces shall exercise due diligence to remove such inability with all reasonable dispatch.

UNITED STATES NOT LIABLE FOR WATER SHORTAGE

19. On account of uncontrollable forces, there may occur at times a shortage during any year in the quantity of water available for furnishing to the Contractor by the United States pursuant to this contract through and by means of the Storage Project, and in no event shall any liability accrue against the United States or any of its officers, agents, or employees for any damage direct or indirect, arising therefrom.

CONTRACTOR TO KEEP BOOKS AND RECORDS

20. The Contractor shall establish and maintain accounts and other books and records sufficient to enable it to furnish, and the Contractor will furnish to the Contracting Officer, upon his request, reports and statements as to the information contained therein pertaining to this contract and the Contractor's operations hereunder.

INSPECTION OF BOOKS AND RECORDS

21. Subject to applicable Federal laws and regulations, the proper officers or agents of the Contractor shall have full and free access at all reasonable times to the Storage Project account books and official records of the Bureau of Reclamation, insofar as the same pertain to the matters and things provided for in this contract, with the right at any time during office hours to make copies thereof, and proper representatives of the United States shall have similar rights with respect to the account books and records of the Contractor as such pertain to this contract.

CONTINGENT UPON APPROPRIATIONS OR ALLOTMENTS OF FUNDS

22. The expenditure of any money or the performance of any work by the United States herein provided for which may require appropriations by the Congress or the allotment of funds shall be contingent upon such appropriations or allotments being made. The failure of the Congress to appropriate funds or the failure of an allotment of funds shall not relieve the Contractor from any obligations under this contract and no liability shall accrue to the United States in the event such funds are not so appropriated or allotted.

REMEDIES - WAIVERS

23. Except for the provisions in Article 17 relating to Arbitration, nothing contained in this contract shall be construed as in any manner abridging, limiting, or depriving either party to this contract of any means of enforcing any remedy, either at law or in equity, for the breach of any of the provisions hereof which it would otherwise have, provided prior notices as herein agreed have been given. Any waiver at any time by either party to this contract of its rights with respect to any default, or any other matter arising in connection with this contract, shall not be deemed to be a waiver with respect to any subsequent default or matter.

OFFICIALS NOT TO BENEFIT

24. No Member of or Delegate to Congress or Resident Commissioner and no officer, agent, or employee of the United States Department of the Interior shall be admitted to any share or part of this contract or to any benefit that may arise herefrom, but this

restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

ASSIGNMENT LIMITED: SUCCESSORS AND ASSIGNS OBLIGATED

25. The provisions of this contract shall apply to and bind the successors and assigns of the respective parties, but no voluntary assignment or transfer of this contract or any part thereof or interest therein shall be valid unless and until approved by the Contracting Officer; provided, that the Contractor may transfer and assign an undivided interest in this contract to any corporation, cooperative, political subdivision or public agency, and any agency of the State of Arizona, participating with the Contractor in the ownership of the Navajo Power Project, and execution of this contract by the Contracting Officer shall constitute approval by the United States of any such transfer and assignment by the Contractor; provided, however, that the Contractor shall give the Contracting Officer contemporaneous written notice of all such transfers, including authenticated copies of all documents relating thereto. Notwithstanding any such transfer of interest contemplated in this article, the Contractor shall be and remain liable to the United States to keep and perform all of the conditions and covenants in this contract on its part to be kept and performed.

The execution of mortgages, trust deeds, security agreements or other instruments for purposes of security, or judicial trustee's sale made thereunder, shall not be deemed to be a voluntary transfer within the meaning of this article. Any transferee, successor or

assignee of the rights of Contractor whether by voluntary transfer, judicial sale, trustee's sale, or otherwise, shall be subject to all provisions and conditions of this contract to the same extent as though such transferee, successor or assignee were the original contractor hereunder.

Contractor shall not receive any valuable consideration for any assignment in excess of previous payments by the Contractor to the United States for water which has not been used and which is assigned to the assignee. The Contractor shall not exact any brokerage, commission, or fee from any person on the assignment of water to be delivered under this contract. In connection with any assignment, the President or General Manager of the Contractor shall certify to the Contracting Officer that the assignment with respect to water delivery was without consideration except as provided above, and that no brokerage, commission, fee, or other charge of any kind was charged to the assignee or any person acting on behalf of the assignee. The Contractor shall maintain books, records, documents, and all other evidence pertaining to any assignment of rights under this contract, and the Contracting Officer shall have access to and the right to examine any books, records, documents, or other evidence of the Contractor involving any transaction, including assignment, related to this contract. Notwithstanding the foregoing, it is understood that all of the Contractor's costs and expenses under this contract or related to its negotiation may be charged proportionally to all entities participating in or purchasing power from Navajo Power Project.

NOTICES

26. (a) Any notice authorized or required to be given to the United States shall be deemed to have been given when mailed, postage prepaid, or delivered to the Regional Director, Region 4, Bureau of Reclamation, United States Department of the Interior, P. O. Box 11568, Salt Lake City, Utah 84111. Any notice authorized or required to be given to the Contractor shall be deemed to have been given when mailed, postage prepaid, or delivered to the Secretary, Salt River Project Agricultural Improvement and Power District, P. O. Box 1980, Phoenix, Arizona 85001.

(b) The designation of the addressee or the address given above may be changed by notice in the same manner as provided in this article for other notices.

EQUAL OPPORTUNITY

27. The provisions of Title 42 U.S.C. 2000-e-2(1) provide for the giving of preference to Indians in employment. Except as therein provided and in keeping with any obligation undertaken or which may be undertaken by any of the corporations comprising the Contractor, or their assignees, pursuant to the terms of said Title 42 U.S.C. 2000-e-2(1) to give preference for employment to qualified Indians for work on or near an Indian Reservation, during the performance of this contract the Contractor agrees as follows:

(a) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex or national origin. Such

action shall include, but not be limited to the following: Employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this Equal Opportunity clause.

(b) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

(c) The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency Contracting Officer, advising the labor union or workers' representative of the Contractor's commitments under Equal Opportunity clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(e) The Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.

(f) In the event of the Contractor's noncompliance with the Equal Opportunity clause of this contract or with any of the said rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g) The Contractor will include the provisions of the paragraphs (a) through (g) in every subcontract or purchase

order unless exempted by rules, regulations or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions; including sanctions for noncompliance; Provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

CONDITIONS PRECEDENT TO DELIVERY OF WATER

28. As a condition precedent to the initial delivery of water hereunder an agreement between the owners of the Navajo Power Project and the Secretary of the Interior or his authorized representative must be consummated for the coordination of the Federal hydroelectric systems with the thermal-electric systems of the owners.

IN WITNESS WHEREOF, the parties hereto have signed their names the day and year first above written.

THE UNITED STATES OF AMERICA

By /s/ Stewart L. Udall
Secretary of the Interior

SALT RIVER PROJECT AGRICULTURAL
IMPROVEMENT AND POWER DISTRICT

ATTEST:

/s/ Don E. Smith
Assistant Secretary

By /s/ V. I. Corbell
President

(SEAL)

Contract No. 14-06-400-5033

Renewal No. 1

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

GLEN CANYON UNIT
COLORADO RIVER STORAGE PROJECT
RENEWAL OF CONTRACT

BETWEEN THE UNITED STATES AND THE SALT RIVER PROJECT AGRICULTURAL
IMPROVEMENT AND POWER DISTRICT
FOR WATER SERVICE FROM LAKE POWELL

This Renewal No. 1 of Contract No. 14-06-400-5033 (Contract), made this 16th day of July, 2012, pursuant to Article 2. of the Contract, the Act of Congress approved June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as the Federal Reclamation Laws and particularly pursuant to the Act of Congress approved April 11, 1956 (70 Stat. 105), between THE UNITED STATES OF AMERICA (United States), acting through the Secretary of the Interior and represented by the Regional Director of the Bureau of Reclamation, Upper Colorado Region and the SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT (Contractor), an agricultural improvement district organized under the laws of the State of Arizona, jointly 'the Parties',

WITNESSETH:

WHEREAS, the following statements are made in explanation:

- a. The United States and the Contractor entered into the Contract on January 17, 1969, for water service from Lake Powell, Glen Canyon Unit, Colorado River Storage Project for the operation of a coal fired steam electric generating plant, the Navajo Generating Station, and
- b. The term of the Contract, as stated in Article 1 therein, is "forty (40) years from the date water is first taken," which date was January 1, 1974, and

c. Pursuant to Article 2 of the Contract., authorized by the Act of June 21, 1963 (P.L. 88-44; 77 Stat. 68), only charges are subject to renegotiation in a renewal of the Contract:

“The Contractor shall have the right to renew this contract for one period of not to exceed twenty (20) years by giving the United States one (1) year’s written notice prior to the end of the initial period, ... The initial renewal shall be subject to renegotiation only of the charges set forth herein giving consideration to the circumstances prevailing at the time of renewal as provided in the Act of June 21, 1963 (P.L. 88-44; 77 Stat. 68)”, and

d. The United States, Arizona Public Service Company (Arizona), the Department of Water and Power of the City of Los Angeles (Los Angeles), Nevada Power Company (Nevada), Tucson Electric Power Company (Tucson) and the Contractor (collectively, ‘the Participants’) entered into the Navajo Project Participation Agreement, dated as of September 30, 1969, which provides for their participation in the Navajo Project, and

e. Pursuant to Article 25 of the Contract, on December 22, 1969, SRP transferred and assigned to Arizona, Los Angeles, Nevada and Tucson undivided interests in the Contract as follows:

- To Arizona an undivided 14.0% interest therein;
- To Los Angeles an undivided 21.2% interest therein;
- To Nevada an undivided 11.3% interest therein; and
- To Tucson an undivided 7.5% interest therein, and

f. The Contractor continues to hold an undivided 46.0% interest in the Contract, of which, an undivided 21.7% interest therein is for the Contractor’s own use and benefit and an undivided 24.3% interest therein is for the use and benefit of the United States. On July 22, 2010, Reclamation received a written request from the Contractor (dated July 14, 2010) to renew the Contract.

NOW, THEREFORE, In consideration of the mutual and dependent covenants contained herein, the parties agree to the following:

TERM OF RENEWAL

1. This Renewal No. 1 shall become effective January 1, 2014, forty (40) years from the date water was first taken under the Contract. The term of this Renewal No. 1 shall be for twenty (20) years beginning January 1, 2014 and expiring December 31, 2033.

2. The Parties recognize and agree that, pursuant to Article 2 of the Contract, only the charges may be renegotiated in this Renewal No. 1, and therefore Article 8. of the Contract is hereby updated and replaced in its entirety to read as follows:

RATE AND METHOD OF PAYMENT

8. (a) *The Contractor shall pay for water service scheduled in Article 7, or as the schedule may be accelerated or partially relinquished as provided in said article, at an annually adjusted rate per acre-foot in accordance with the Debt Service Methodology used for pricing water service from the Colorado River Storage Project. Payment for each calendar year shall be made quarterly in four (4) equal payments on March 1, June 1, September 1 and December 1 of each year. Should there be any curtailment in water service pursuant to the provisions of Articles 4, 7(c), 12, or 19, a proportionate adjustment in payments required will be made.*

(b) *The Debt Service Methodology is based upon the costs of servicing a portion of the Federal debt incurred in developing water for consumptive uses in the Colorado River Storage Project initial units, named Navajo Reservoir, Wayne N. Aspinall, Glen Canyon, and Flaming Gorge. For rate setting purposes, the debt to be serviced by this Renewal No. 1 shall be established January 1, 2014 when this Renewal No. 1 becomes effective as stated in Article 1. The first annually adjusted, per acre-foot rate shall be calculated from an amortization of the total debt service amount using the annuity due formula, a 40-year payment term, and an interest rate which shall be the annual average rate for 20-year Treasury constant maturities two calendar years prior to the year of renewal.*

(c) *For each succeeding year thereafter, the cumulative debt to be serviced shall be recalculated as of each January 15 in accordance with the following:*

$$D_n = D_{n-1} - R_{n-1} - P_{n-1} + I_{n-1} \pm \Delta C_{n-1}$$

Where:

D_n = *The recalculated total debt to be serviced by the Contractor for the year in which the rate is being set.*

D_{n-1} = *The debt to be serviced by the Contractor as it existed at the beginning of the previous year.*

R_{n-1} = *The amount of debt serviced per acre-foot multiplied by the number of acre-feet relinquished in the previous year, as provided by Article 7(c).*

P_{n-1} = *The annual payment for the previous year.*

I_{n-1} = Interest accrued for the previous year based on the annual average interest rate of the previous 2 years for 20-year Treasury constant maturities.

ΔC_{n-1} = A pro rata share of any change during the previous year in multipurpose costs allocated to consumptive use for the consolidated Colorado River Storage Project.

The rate per acre-foot for payments after the first year shall then be determined in accordance to the following procedure:

STEP 1: D_n for the year of calculation is divided by the total number of acre-feet under contract for that year = X .

STEP 2: Amortize X , using the annuity due formula, with the interest rate as described above and for the number of years equal to 40 minus the number of years this Renewal has been in effect.

- (d) The United States will bill the Contractor by February 1, May 1, August 1, and November 1 and the Contractor agrees to pay for the amount of water under contract for that calendar year, whether or not the water is actually diverted from Lake Powell. Upon receipt of such bill for water, the Contractor shall remit payment to the United States within 60 days from the date of said bill.
- (e) All payments from the Contractor to the United States under this Renewal No. 1 shall be by the medium requested by the United States on or before the date payment is due. The required method of payment may include checks, wire transfers, or other types of payment specified by the United States.
- (f) This Article has been negotiated, drafted, and reviewed by the parties hereto, each of whom is sophisticated in the matters to which it pertains.
- (g) The Contractor shall be subject to interest, administrative, and penalty charges on delinquent payments. If a payment is not received by the due date, the Contractor shall pay an interest charge on the delinquent payment for each day the payment is delinquent beyond the due date. If a payment becomes 60 days delinquent, the Contractor shall pay, in addition to the interest charge, an administrative charge to cover additional costs of billing and processing the delinquent payment. If a payment is delinquent 90 days or more, the Contractor shall pay, in addition to the interest and administrative charges, a penalty charge for each day the payment is delinquent beyond the due date, based on the remaining balance of the payment due at the rate of 6 percent per year. The

Contractor shall also pay any fees incurred for debt collection services associated with a delinquent payment.

- (h) The interest rate charged shall be the greater of either the rate prescribed quarterly in the Federal Register by the Department of the Treasury for application to overdue payments, or the interest rate of 0.5 percent per month. The interest rate charged will be determined as of the due date and remain fixed for the duration of the delinquent period.*
- (i) When a partial payment on a delinquent account is received, the amount received shall be applied first to the penalty charges, second to the administrative charges, third to the accrued interest, and finally to the overdue payment.*
- (j) Upon execution of the Contract, the Contractor shall furnish the Contracting Officer with the Contractor's taxpayer's identification number (TIN). The purpose for requiring the Contractor's TIN is for collecting and reporting any delinquent amounts arising out of the Contractor's relationship with the United States.*

3. The existing Article 10. "INTEREST UPON DELINQUENCY IN PAYMENT" is hereby deleted.

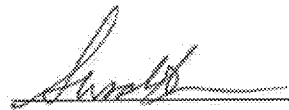
4. REMAINING OBLIGATIONS

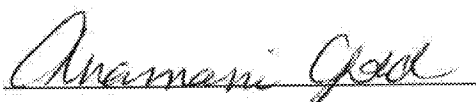
Unless otherwise specified in this Renewal No. 1, the Contract, and all its terms, remain unchanged and in full force and effect throughout the term of this Renewal No. 1.

IN WITNESS WHEREOF, the parties hereto have caused this Renewal No. 1 to be duly executed.


Approved:

UNITED STATES OF AMERICA


Office of the Regional Solicitor


Regional Director
Upper Colorado Region
Bureau of Reclamation

SALT RIVER PROJECT
AGRICULTURAL IMPROVEMENT
AND POWER DISTRICT


Associate General Manager and
Chief Power System Executive

CJY-40-13

RESOLUTION OF THE
NAVAJO NATION COUNCIL

22nd NAVAJO NATION COUNCIL -- Third Year, 2013

AN ACTION

RELATING TO RESOURCES AND DEVELOPMENT, BUDGET AND FINANCE, AND NAABIK'İYATI'; RESCINDING CAP-21-13 AND RECOMMENDING AND APPROVING AMENDMENT NO. 1 TO THE INDENTURE OF LEASE EFFECTIVE DECEMBER 23, 1969 BETWEEN THE NAVAJO NATION AND ARIZONA PUBLIC SERVICE COMPANY, DEPARTMENT OF WATER AND POWER OF CITY OF LOS ANGELES, NEVADA POWER COMPANY, SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT

BE IT ENACTED:


1. The Navajo Nation hereby finds the following with respect to this resolution:
 - A. The Secretary of the U.S. Department of Interior (Secretary) approved an Indenture of Lease, titled "Navajo Project-Indenture of Lease, Navajo Units 1, 2, and 3" and attached hereto as Exhibit E, effective December 23, 1969, between the Navajo Nation and Arizona Public Service Company (APS), Department Water and Power of City of Los Angeles (LADWP), Nevada Power (NP), the Salt River Project Agricultural Improvement and Power District (SRP), and Tucson Electric Power Company (TEP), hereinafter, collectively referred to as the Lessees, for the construction, operation, and maintenance of Units 1, 2, and 3 of the Navajo Generating Station (NGS) and associated facilities; and
 - B. The Indenture of Lease between the Navajo Nation and the Lessees provides an Option and/or Right to the Lessees to extend the Lease for an additional 25 year period to December 22, 2044; and
 - C. LADWP has informed the participants of the NGS that LADWP will terminate its 21.2% ownership interest in the NGS before the expiration date of December 22, 2019 or earlier; and

- D. SRP is negotiating a sale agreement with LADWP, which is subject to the approval of their respective governing bodies, to potentially acquire LADWP's interest in the NGS; and
 - E. The Navajo Nation and SRP have negotiated Amendment No. 1 to the Indenture of Lease, (Amendment No. 1), attached hereto as Exhibit A, that, among other things, extends the term of the Lease and provides the Navajo Nation's consent to the issuance, renewal and/or extension of the 323 Grants of Rights-of-Way and Easement listed in Exhibits 1 and 2 of Amendment No. 1 through December 22, 2044; and
 - F. The continued operation of the NGS will allow for employment at the Peabody Kayenta Mine and the NGS to be continued and retained. The Navajo Nation will also continue to receive current revenues that are generated from the Peabody Kayenta Coal Mine and additional revenues as provided for in Amendment No. 1; and
 - G. Amendment No. 1 will provide the Navajo Nation up to approximately forty-three million dollars (\$43,000,000.00) per year (annually adjusted) through 2044, as set forth in Exhibits A and B; and
 - H. The Navajo Generating Station and Kayenta Mine: An Economic Impact Study, is attached as Exhibit C; and
 - I. It is in the best interest of the Navajo Nation to approve Amendment No. 1.
- 2. The Navajo Nation hereby rescinds CAP-21-13 with its attachments, attached hereto as Exhibit 1.
 - 3. The Navajo Nation hereby recommends and approves Amendment No. 1 to the Indenture of the Lease, as set forth in Exhibit A, between the Navajo Nation, APS, LADWP, NP, SRP and TEP; and
 - 4. Nothing in Amendment No. 1 or the Indenture of Lease hereto precludes the Navajo Nation from asserting a claim(s) for water rights to the Upper Colorado River Basin or settlement of such claim(s) or hinders the Navajo Nation from asserting

- (i) through December 22, 2019, a claim to the State of Arizona's 50,000 acre foot allocation of Upper Colorado River Basin water or (ii) from and after December 23, 2019, a claim to any quantity of water from the Upper Colorado River Basin for its lands in Arizona, and
5. Amendment No. 1 is conditioned on SRP requesting a meeting with the Resources and Development Committee (RDC) of the Navajo Nation Council on an annual basis to discuss potential opportunities that may increase the utilization of Navajo-owned business and suppliers by the Navajo Generating Station. The annual meeting request shall be submitted to the Chairperson and Vice-Chairperson of the RDC. The meetings shall include representatives from the Navajo Nation Division of Economic Development; and
 6. The Council must approve these documents on or before July 31, 2013 and the President of the Navajo Nation must execute the necessary documents on or before July 31, 2013. And on subsection B. Appropriate officials and employees within the Navajo Nation Division of Natural Resources and the Navajo Nation Department of Justice must approve these agreements on or before July 31, 2013. The Navajo Nation Office of the Attorney General must execute these agreements on or before July 31, 2013.
 7. The Navajo Nation hereby authorizes the President of the Navajo Nation to execute any and all documents necessary to effectuate the intent of this resolution.

CERTIFICATION

I hereby certify that the foregoing resolution was duly considered by the Navajo Nation Council at a duly called meeting in Window Rock, Navajo Nation (Arizona) at which a quorum was present and that the same was passed by a vote of 16 in favor and 6 opposed, this 17th day of July 2013.


Mel R. Begay, Pro Tem Speaker
Navajo Nation Council

7/26/13
Date

Motion: Honorable Duane Tsinigine
Second: Honorable David L. Tom

ACTION BY THE NAVAJO NATION PRESIDENT:

1. I hereby sign into law the foregoing legislation, pursuant to 2 N.N.C. §1005 (C) (10), on this 30th day of July 2013.



Ben Shelly, President
Navajo Nation

2. I hereby veto the foregoing legislation, pursuant to 2 N.N.C. §1005 (C) (11), this _____ day of _____ 2013 for the reason(s) expressed in the attached letter to the Speaker.

Ben Shelly, President
Navajo Nation

AMENDMENT NO. 1 TO
INDENTURE OF LEASE
NAVAJO UNITS 1, 2 AND 3

BETWEEN

THE NAVAJO NATION

AND

ARIZONA PUBLIC SERVICE COMPANY

DEPARTMENT OF WATER AND POWER OF CITY OF LOS ANGELES

NEVADA POWER COMPANY dba NV ENERGY

SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT

TUCSON ELECTRIC POWER COMPANY

DATED _____, 20__

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AMENDMENT NO. 1 TO INDENTURE OF LEASE

This Amendment No. 1 (the "Amendment") to the Indenture of Lease dated September 29, 1969 (the "Lease") is by and between the Navajo Nation, acting through the Navajo Nation Council and its President, for and on behalf of the Navajo Nation (the Navajo Nation is referred to as "Lessor"), and Arizona Public Service Company, Department of Water and Power of the City of Los Angeles, Nevada Power Company dba NV Energy, Salt River Project Agricultural Improvement and Power District, and Tucson Electric Power Company (formerly known as Tucson Gas & Electric Company) (collectively, together with their successors and assigns, referred to as "Lessees", and each individually referred to as "Lessee"). The Navajo Nation and the Lessees are hereinafter collectively referred to as the "Parties".

The Parties agree as follows:

I. RECITALS

- A. Lessor and Lessees entered into the Lease for the lease of the Leased Lands.
- B. Lessees wish to exercise their right and option to extend the Lease Term as provided in Section 6 of the Lease from and after December 23, 2019, as further amended by the terms and provisions of this Amendment. Except as modified by this Amendment, all of the terms and conditions of the Lease shall remain in full force and effect.
- C. In addition, the Lessees wish to have the Navajo Nation provide its consent to the issuance or extension by the Secretary of the 323 Grants, as more particularly provided in this Amendment.
- D. Under federal law this Amendment requires the approval of the Secretary of the Interior or his delegate to become effective.
- E. The Secretary will not make a decision with respect to the approval of this Amendment prior to compliance with applicable laws.

- F. The Parties desire to engage in financial transactions related to this Amendment in advance of the Secretary's decision.
- G. The Parties recognize that pursuant to other agreements related to the Navajo Project and as recognized in the Lease, SRP owns 24.3% of the Navajo Generating Station for the use and benefit of the United States of America (the "United States' Share").
- H. The Parties recognize that pursuant to the other agreements related to the Navajo Project SRP is precluded from agreeing to terms in this Amendment that affect the United States' Share without the prior written consent of the United States.
- I. Pursuant to other agreements related to the Navajo Project, the United States and the Lessees are required to provide to SRP advance payment for their separate portions of costs and expenses to be paid by SRP as Operating Agent of NGS, including payments to be paid to the Navajo Nation under the Lease and this Amendment.
- J. Upon receipt by SRP of advance payments from the United States and the Lessees, SRP, as the Operating Agent, shall then make any payment required by the terms of this Amendment to the Navajo Nation.
- K. The Parties recognize that in the event the Secretary were to decide to approve this Amendment and the United States were to provide written notice to SRP providing consent to SRP's execution of this Amendment for the use and benefit of the United States, insofar as this affects the United States' Share, time is required for the United States to secure necessary funds as, for example, through the issuance of a bond by the operating agent for the Central Arizona Project.

II. DEFINITIONS

"323 Grant" has the meaning set forth in the Lease for those new right-of way and easement grants or extension of existing rights-of-way and easements described in Exhibit 1 and Exhibit 2

attached hereto.

"Additional Payment Accrual Period" has the meaning set forth in Section VI(B) (Additional Payments).

"Additional Payments" has the meaning set forth in Section VI(A) (Additional Payments).

"Affiliate" means, when used in reference to the Participants in the Navajo Project, any other Person that directly, or indirectly, controls, is controlled by, or is under common control with a Participant. For purposes of this definition, "control, "controlled by" and "under common control" means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of such Person whether through the ownership of voting securities, participant interests, other ownership interests or contract.

"Amendment" has the meaning set forth in the opening paragraph of this Amendment.

"Beginning Index" has the meaning set forth in Section VIII(A) (Payment Escalation).

"CAWCD" means the Central Arizona Water Conservation District.

"Chapter Fund" has the meaning set forth in Section XVI(A) (Local Community Involvement).

"Consumer Price Index" means the United States Department of Labor, Bureau of Labor Statistics, Consumer Price Index – U.S. City Average, All Urban Consumers.

"Continued Transmission System Participants" has the meaning set forth in Section IX(C)(Termination; Termination of Payments).

"Effective Date" has the meaning set forth in Section III(B) (Term; Effectiveness; Payments).

"Escalation Factor" has the meaning set forth in Section VIII(A) (Payment Escalation).

"Existing Lease Payments" has the meaning set forth in Section V(B)(2) (Lease Payments).

"Extension Index" has the meaning set forth in Section VIII(A) (Payment Escalation).

"Force Majeure Event" means that neither the Navajo Nation nor any or all of Lessees, shall be

deemed to be in default in respect to any obligation under the Lease, as amended, if prevented from fulfilling such obligation by reason of "uncontrollable forces", as such term is defined in Section 24 of the Lease, but excluding action or inaction by the Navajo Nation tribal courts, Council and its President, for and on behalf of the Navajo Nation.

"Four Corners Lease Amendment" has the meaning set forth in Section XV(E)(1) (Consent to Grants of Right-of-Way and Easement).

"Four Corners Participants" has the meaning set forth in Section XV(E) (Consent to Grants of Right-of-Way and Easement).

"Initial Signing Payment" has the meaning set forth in Section VII (United States Signing Payment).

"LADWP" means Department of Water and Power of the City of Los Angeles.

"Lease" means the Indenture of Lease—Navajo Units 1, 2 and 3 between the Navajo Tribe of Indians and Arizona Public Service Company, Department of Water and Power of City of Los Angeles, Nevada Power Company, Salt River Project Agricultural and Improvement and Power District and Tucson Gas and Electric Company effective as of December 23, 1969.

"Lease Payment Accrual Period" has the meaning set forth in Section V(B)(1) (Lease Payments).

"Lease Payments" has the meaning set forth in Section V(A)(3) (Lease Payments).

"Leased Lands" has the meaning set forth in the Lease.

"Lease Year" Lease Year 1 means the date this Amendment is signed by the Navajo Nation through the following December 22. Each subsequent Lease Year is the twelve (12) full months beginning December 23 of the preceding Lease Year through December 22 of the subsequent Lease Year.

"Lessee(s)" has the meaning set forth in the opening paragraph of this Amendment.

"Lessor" has the meaning set forth in the opening paragraph of this Amendment.

"Moenkopi-Eldorado Transmission Line" has the meaning set forth in Section XV(E)(1) (Consent to Grants of Right-of-Way and Easement).

"MW" means megawatt.

"Navajo Generating Station Scholarships" has the meaning set forth in Section XVII(A) (Scholarship).

"Navajo Nation" means the Navajo Nation (formerly known as The Navajo Tribe of Indians as stated in the Lease), and includes any political subdivision, including but not limited to any Chapter, Township, Township Commission, enterprise or taxing authority of the Navajo Nation.

"Navajo Nation Interest" has the meaning set forth in Section XI(A) (Navajo Nation Ownership of the Navajo Project).

"Navajo Nation Purchase Option" has the meaning set forth in Section XI(A) (Navajo Nation Ownership of the Navajo Project).

"Navajo Nation Right of First Refusal Option" has the meaning set forth in Section XI(C) (Navajo Nation Ownership of the Navajo Project).

"Navajo Project" means the Navajo Generating Station, associated facilities, railroad and transmission system.

"Net Capacity" means the sum of the unit values reported to the U.S. Energy Information Administration on Form EIA-860 Schedule 3, Part B, Line 2 for summer capability. This data can also be found on the EIA website at <http://www.eia.gov/electricity/data/eia860/index.html>. If the U.S. Energy Information Administration Form EIA-860 Schedule 3, Part B, becomes unavailable to the public, then there shall be substituted a comparable reference, reasonably acceptable to all Parties.

"NGS" means the Navajo Generating Station as defined in the Lease.

"NGS Community Chapters" means the Navajo Nation Bodaway/Gap, Cameron, Chilchinbeto, Coal Mine Canyon, Coppermine, Dennehotso, Kaibeto, Kayenta, LeChee, Navajo Mountain, Oljato, Shonto, Tonalea, Ts'ah Bii Kin and Tuba City chapters, in which the Navajo Project, associated facilities and 323 Grants are located.

"Non-U.S. Participant" or "Non-U.S. Participants" means respectively, an individual entity of the following list of entities or all of the following entities collectively: Arizona Public Service Company, LADWP, NV Energy, Tucson Electric Power Company and SRP, where SRP's obligation is limited only to that portion of the Navajo Project owned for its own use and benefit.

"Non-U.S. Participant" or "Non-U.S. Participants" shall expressly exclude any SRP ownership in the Navajo Project for the use and benefit of the United States. "Non-U.S. Participant" or "Non-U.S. Participants" shall also include any entity other than the U.S. purchasing a future interest in the Navajo Project.

"Notice of Cessation" has the meaning set forth in Section IX(B) (Termination; Termination of Payments).

"Notice of Decision" has the meaning set forth in Section IX(A) (Termination; Termination of Payments).

"Notice of Lease Termination" has the meaning set forth in Section IX(B) (Termination; Termination of Payments).

"Notice of Planned Cessation" has the meaning set forth in Section IX(A) (Termination; Termination of Payments).

"Operating Agent" means SRP as the operating agent of NGS, and its successors.

"Participant" or "Participants" means respectively, an individual entity of the following list of

entities or all of the following entities collectively: Arizona Public Service Company, LADWP, NV Energy, Tucson Electric Power Company, SRP and the United States of America, acting through the Bureau of Reclamation pursuant to a delegation of authority by the Secretary of Interior. "Participant" or Participants" shall also include any entity other than the U.S. purchasing a future interest in the Navajo Project as provided for in other Navajo Project agreements.

"Parties" has the meaning set forth in the opening paragraph of this Amendment

"Payments" means collectively, the payments under this Amendment, including the Signing Bonus, Lease Payments, Additional Payments, payments to the Chapter Fund, payments to the Scholarship Fund, and the Signing Payment.

"Person" means an individual, corporation, unincorporated organization, partnership, limited liability company, joint venture, trust, governmental agency, Tribal government or tribally owned enterprise or other entity.

"Phase I ESA" has the meaning set forth in Section XIV(E)(1) (Removal of Improvements; Restoration).

"Remainder Signing Payment" has the meaning set forth in Section VIII(E) (Payment Escalation).

"Reservation Lands" has the meaning set forth in the Lease.

"Revocation Notice" has the meaning set forth in Section X (Revocation of Amendment).

"Scholarship Fund" has the meaning set forth in Section XVII(A) (Scholarship).

"Secretary" means the Secretary of the United States Department of the Interior or his/her authorized representative or such person or agency as he/she may expressly designate to perform the functions provided in the Lease and this Amendment to be performed by him/her or such federal agency as may succeed to the duties of the Secretary of the Interior under the Lease and this

Amendment.

"Secretary Approval" means the Secretary's approval of this Amendment in accordance with title 25, United States Code Section 415(a), written authorization to SRP to execute the amendment for the use and benefit of the United States and issuance of new or renewal of existing 323 Grants for use by the Navajo Project.

"Signing Bonus" has the meaning set forth in Section IV (Signing Bonus).

"Signing Bonus Deadline" has the meaning set forth in Section IV (Signing Bonus).

"SRP" means the Salt River Project Agricultural Improvement and Power District.

"Term" has the meaning set forth in Section III(C) (Term; Effectiveness; Payments).

"Transmission Facility Removal Notice" has the meaning set forth in Section XIV(E) (Removal of Improvements; Restoration).

"United States' Share" has the meaning set forth in Section I(G) (Recitals).

III. TERM; EFFECTIVENESS; PAYMENTS

- A. The recitals set forth in Section I of this Amendment are incorporated into and made part of this Amendment.
- B. This Amendment shall be binding and effective upon all Parties when executed by the Navajo Nation and all of the Lessees, and after the expiration of thirty (30) days following Secretary Approval provided the Operating Agent on behalf of Lessees has not objected to any material deviations in the terms of Secretary Approval from the Parties' submission for Secretary Approval within such thirty (30) day period, with such date referred to herein as the "Effective Date". If the Operating Agent on behalf of the Lessees objects to the terms of Secretary Approval within the thirty (30) day period and the objection is not resolved to the satisfaction of all Parties prior to the earlier of (i) one

hundred eighty (180) days after the date of Secretary Approval, or (ii) the expiration of the Lease in accordance with its original term, then this Amendment shall terminate. Notwithstanding the foregoing, the Non-U.S. Participants commit to make all Payments due to the Navajo Nation prior to the Effective Date as provided for in this Amendment following execution by all Non-U.S. Participants.

- C. Subject to the modifications provided for in this Amendment, including without limitation the provisions of Sections IX (Termination; Termination of Payments) and XIV (Removal of Improvements; Restoration), Lessees hereby exercise their right and option as provided in Section 6 of the Lease to extend the term (the "Term") of the Lease from December 23, 2019 through December 22, 2044.
- D. If any transmission line located on 323 Grant premises has not been used for more than two (2) years after the effective date of the renewed or new 323 Grants, then the 323 Grant associated with that line will be deemed to expire pursuant to 25 CFR §169.20.
- E. Subject to the provisions of Section XIV (Removal of Improvements; Restoration), the 323 Grants for the Navajo Project shall be issued by the Secretary and extended through December 22, 2044.
- F. Notwithstanding anything in this Amendment to the contrary, Payments made under this Amendment by SRP, in its capacity as the Operating Agent, are conditioned upon the prior receipt of the funds from the Participants, as applicable, in accordance with the terms of the other Navajo Project agreements. All Payments to be made by the Lessees under this Amendment shall be paid to the Navajo Nation by SRP, as Operating Agent, except for tax payments required in the Lease. Such tax payments shall cease as provided in accordance with Section VI(B)(2) (Additional Payments). Upon receipt by SRP of Payments, SRP, as the Operating Agent, shall then make any payment required by the

terms of this Amendment to the Navajo Nation.

IV. SIGNING BONUS

If the Navajo Nation provides its final approval and execution of this Amendment and the Past Use Agreements as provided in subparagraphs A and B below, the Navajo Nation shall receive a signing bonus of one million dollars (\$1,000,000) (the "Signing Bonus"). The Past Use Agreements are the "230 kV Tie Line Settlement and Release Agreement" and the "Navajo Project Western Transmission System Settlement and Release Agreement" previously negotiated by the Parties. Final approval of the Amendment and the Past Use Agreements shall be deemed to have occurred when the following events and actions have been completed:

- A. Final approval for the Amendment means approval of documents that are mutually acceptable to the Parties, specifically including the Navajo Nation Council authorizing resolution, Amendment, and other attendant documents that require or imply a legal obligation for either Party. The Council must approve these documents on or before July 31, 2013 and the President of the Navajo Nation must execute the necessary documents on or before July 31, 2013.
- B. Final approval of the Past Use Agreements means approval of the "230 kV Tie Line Settlement and Release Agreement" and the "Navajo Project Western Transmission System Settlement and Release Agreement" that are mutually acceptable to the Parties. Appropriate officials and employees within the Navajo Nation Division of Natural Resources and the Navajo Nation Department of Justice must approve these agreements on or before July 31, 2013. The Navajo Nation Office of the Attorney General must execute these agreements on or before July 31, 2013.

If the conditions to the Signing Bonus set forth above are met, the Navajo Nation shall receive a signing bonus of one million dollars (\$1,000,000.00) (the "Signing Bonus"). If the conditions

to the Signing Bonus are met, SRP as the Operating Agent shall pay the Non-U.S. Participants' share or portion of the Signing Bonus in the amount of seven hundred fifty-seven thousand dollars (\$757,000.00) to the Navajo Nation within thirty (30) days of the Navajo Nation's execution of this Amendment. Upon Secretary Approval, SRP shall pay the portion of the Signing Bonus attributable to the United States' Share in the amount of two hundred forty-three thousand dollars (\$243,000.00) on the Effective Date. If the Navajo Nation is delayed or hindered in or prevented from the performance approval and execution of this Amendment by reasons of a Force Majeure Event, the Signing Bonus Deadline shall be extended for the period of the delay.

V. LEASE PAYMENTS

A. Consideration for Lease Payments

1. In consideration for the lease to Lessees of the Leased Lands and the 323 Grants listed in Exhibit 1 and Navajo Nation consent to the Secretary's issuance of the new or renewed 323 Grants, Lessees shall pay the Lease Payments, when the Parties have completed the necessary approvals, as set forth in this Amendment. The Parties recognize that the necessary approvals for the pre-2020 Non-U.S. Participants' Lease Payments do not include Secretary Approval.
2. The Parties acknowledge and agree that all Lease Payments in excess of Existing Lease Payments made on or before December 23, 2018 are in consideration for this Amendment and for the Navajo Nation's consent to the issuance or renewal of the 323 Grants by the Secretary.
3. Lessees will pay lease payments to the Navajo Nation annually in advance on or before December 23, the first day of the Lease Year to which the payment is

applicable (the "Lease Payment") as further provided below. Lease Payment will be paid to the Navajo Nation in a single payment.

B. Lease Payments Prior to Secretary Approval

1. For the Lease Year 2013, if the Navajo Nation provides final approval and executes this Amendment before December 23, 2013, the Non-U.S. Participants' 2013 Lease Year Lease Payment shall accrue in the amounts as provided below, which amounts depend on the date of execution of this Amendment by the Navajo Nation:

Date of Navajo Nation Execution of this Amendment	Lease Payment for Lease Year 2013
December 1, 2012 - April 30, 2013	\$6,369,090.00
May 1, 2013 – July 31, 2013	\$4,776,817.00
August 1, 2013 – October 31, 2013	\$3,184,545.00
November 1, 2013 – December 22, 2013	\$1,592,273.00
On or after December 23, 2013	\$0

If the Navajo Nation executes this Amendment on or after December 23, 2013, but prior to Secretary Approval, the Lease Payment by the Non-U.S. Participants in the amount of six million three hundred sixty-nine thousand ninety dollars (\$6,369,090.00) per Lease Year shall accrue beginning with the first December 23 following execution of this Amendment by the Navajo Nation and will continue until the earlier of: (a) December 23, 2018; or (b) the date when all of the Non-U.S. Participants have executed this Amendment (the "Lease Payment Accrual Period"). The Lease Payment accrued during the Lease Payment Accrual Period shall be paid by the Non-U.S. Participants to the Navajo Nation within thirty (30) days of the execution of this Amendment by all Non-U.S. Participants. Notwithstanding anything contained herein to the contrary, if this Amendment is not approved and executed by all of the Non-

U.S. Participants on or before December 22, 2018, then no accrued Lease Payments shall be due by the Non-U.S. Participants to the Navajo Nation.

2. During the Lease Payment Accrual Period, Lessees shall continue to pay to the Navajo Nation the annual lease rental of six hundred eight thousand four hundred dollars (\$608,400.00) as provided in Section 7 of the Lease (the "Existing Lease Payments"). SRP shall continue to pay to the Navajo

Nation the portion of the Existing Lease Payment attributable to the United States' Share in the amount of one hundred forty-seven thousand eight hundred forty-one dollars and 20/100 (\$147,841.20) annually until the earlier of: (a) December 23, 2018; or (b) the Effective Date.

3. Beginning on the first December 23 following execution of this Amendment by the Navajo Nation and all Non-U.S. Participants, the Non-U.S. Participants shall make Lease Payments to the Navajo Nation in the amount of six million eight hundred twenty-nine thousand six hundred forty-eight and 84/100 dollars (\$6,829,648.84) per Lease Year and their obligation to pay their portion of the Existing Lease Payments and any other payments made for use of transmission corridors associated with the Navajo Project will end. The Lease Payment in the amount of six million eight hundred twenty-nine thousand six hundred forty-eight and 84/100 dollars (\$6,829,648.84) will continue until the earlier of: (a) December 23, 2018; or (b) the Effective Date.

C. Lease Payments After the Effective Date

1. Upon the Effective Date, Lessees will commence making Lease Payments to the Navajo Nation in the amount of nine million dollars (\$9,000,000.00) for the following Lease Year until terminated in accordance with Section IX

(Termination; Termination of Payments); provided, however, that such payments will not commence until the first December 23 following the Effective Date.

2. The Lease Payment payable after the Effective Date is based upon the total of 7,472 acres for the Navajo Project. If additional acreage for the Navajo Project is required, the Operating Agent shall commission a survey of the portion of land to be added to the Navajo Project to determine the exact acreage. For such additional acreage, if any, the Lease Payment shall be adjusted upward based on \$1,204 per additional acre escalated according to Section VIII (Payment Escalation), except as provided in Section XV.E.1 (Consent to Rights-of-Way and Easement).

D. Escalation of Lease Payments

All Lease Payments, other than Existing Lease Payments, to be made by any Lessee, whether prior to or after the Effective Date or during the Lease Payment Accrual Period, shall be escalated according to Section VIII (Payment Escalation).

VI. ADDITIONAL PAYMENTS

- A. In consideration of the additional payments by Lessees (the "Additional Payments"), the amounts of which are described below, the entirety of Section 7(f) of the Lease and the following language from Section 7(e) of the Lease are deleted effective upon the Effective Date:

"provided, however, that after thirty-five (35) years from the commencement of commercial operation of Unit 3 of the Navajo Generation Station, the foregoing covenants shall lapse as to taxation of the property of Lessees located on the Leased Lands, or located on Reservation Lands pursuant to the Related Rights, or located pursuant to the rights-of-way and easements referred to in Sections 5(a) and 5(b) hereof; provided that during the remainder of the term of the Lease, no property taxes

shall be levied by the Tribe on such property at a rate or in any amount, in relation to value, in excess of one-half (1/2) of the equivalent rate, in relation to value, of the aggregate property taxes levied or imposed by the State of Arizona or any political subdivision thereof, as the case may be, applicable to such property at that time."

The remainder of the language in Section 7(e) of the Lease shall remain in full force and effect.

B. Additional Payments—Non-U.S. Participants—Prior to Lease Year 2020

1. Subject to Section VI(B)(2) below, upon execution of this Amendment by the Navajo Nation, the amount of one million eight hundred ninety-nine thousand six hundred seventy-two dollars (\$1,899,672.00) shall commence accruing per quarter payable to the Navajo Nation by the Non-U.S. Participants as the Additional Payment (the "Pre-2020 Additional Payment") as further provided below. If the Navajo Nation executes this Amendment on or before April 30, 2013, then the accrued amount of Pre- 2020 Additional Payment owed by the Non-U.S. Participants will be calculated quarterly beginning with the January 31, 2013 quarterly payment. If the Navajo Nation executes this Amendment on or after May 1, 2013, then the accrued amount of the Pre-2020 Additional Payment owed by the Non-U.S. Participants will be calculated beginning with the first quarterly due date following execution of this Amendment by the Navajo Nation. Quarterly payments will be accrued on January 31, April 30, July 31 and October 31 of each year until the earlier of: (a) the date that all of the Non-U.S. Participants execute this Amendment; or (b) October 31, 2019 (the "Additional Payment Accrual Period"). At the end of the Additional Payment Accrual Period, the Pre-2020 Additional Payment then accrued will be paid to the Navajo Nation

by the Non-U.S. Participants within thirty (30) days of the execution of this Amendment by all of the Non-U.S. Participants. Notwithstanding anything contained herein to the contrary, if this Amendment is not approved and executed by all of the Non-U.S. Participants on or before October 31, 2019, then no accrued Additional Payment shall be due by the Non-U.S. Participants to the Navajo Nation.

2. Until the Effective Date, the Lessees shall continue paying to the Navajo Nation their respective tax payments owed pursuant to the Lease and the Additional Payment amounts through October 31, 2019 shall be reduced by the amount of the tax payments made to the Navajo Nation by the Lessees. Upon the Effective Date, the obligation of Lessees to pay taxes pursuant to the Lease shall be prorated through the Effective Date and will thereafter cease.
3. Upon execution of this Amendment by the Navajo Nation and all Non-U.S. Participants, the Non-U.S. Participants will begin paying the Pre- 2020 Additional Payment in the amount of one million eight hundred ninety-nine thousand six hundred seventy-two dollars (\$1,899,672.00), minus any taxes paid after the previous quarterly payment, per quarter until the earlier of: (1) October 31, 2019, or (2) the date the Operating Agent gives a Notice of Cessation under Section IX (Termination; Termination of Payments) that NGS has ceased operation.

C. Prior to Lease Year 2020 Additional Payment—United States

If Secretary Approval is provided prior to October 2019, upon the Effective Date, SRP will begin making Additional Payments to the Navajo Nation attributable to the United States' Share in the amount of six hundred nine thousand eight hundred two dollars (\$609,802.00) per quarter until October 31, 2019.

D. Commencing Lease Year 2020 Additional Payments—Lessees

1. If the Effective Date occurs prior to December 23, 2019, and if the Operating Agent has not given a Notice of Cessation to the Navajo Nation pursuant to Section IX (Termination; Termination of Payments), Lessees shall pay the Additional Payment of thirty-four million dollars (\$34,000,000.00) per Lease Year in quarterly installments of eight million five hundred thousand dollars (\$8,500,000.00) to the Navajo Nation beginning on January 31, 2020. The quarterly payments will be due on January 31, April 30, July 31 and October 31 of each Lease Year and will continue through October 31, 2044, subject to the adjustment provision in Section VI(D)(2) below (relating to Net Capacity) and the termination provisions in Section IX (Termination; Termination of Payments).
2. If the Net Capacity is reduced from the existing Net Capacity of 2,250 MW by a cumulative amount of ten percent (10%) or more at any time prior to the expiration of the Term, the Additional Payments will be reduced by the total percentage of such reduction. If the Net Capacity of NGS is increased over the existing Net Capacity of 2,250 MW by a cumulative amount of by ten percent (10%) or more at any time prior to the expiration of the Term, the Additional Payments shall be increased by the total percentage of such increase. Thereafter, any future Net Capacity reduction or increase percentages will result in a proportionate decrease or increase in the Additional Payment.

E. Escalation of Additional Payments

All Additional Payments, to be made by any Lessee, whether or not prior to or after Lease Year 2020 or during the Additional Payment Accrual Period, shall be escalated according to Section VIII (Payment Escalation).

VII. UNITED STATES SIGNING PAYMENT

Upon the Effective Date, SRP shall make an Initial Signing Payment to the Navajo Nation attributable to the United States' Share in the amount of one million dollars (\$1,000,000.00) (the "Initial Signing Payment"), which includes the United States' portion of any Signing Bonus and a portion of the Additional Payments. In addition, as set forth in the following sentence, SRP shall pay the Remainder Signing Payment to the Navajo Nation attributable to the United States' Share, the amount of which is dependent on the date the Navajo Nation executes this Amendment and the date of Secretary Approval, as set forth in Exhibit 3 attached hereto. In order to provide CAWCD, the operating agent for the Central Arizona Project, sufficient time to obtain financing, the Remainder Signing Payment shall be paid as soon as practicable, but no later than eighteen (18) months after the Effective Date. The Navajo Nation and SRP shall collaborate with CAWCD and the United States on efforts to minimize the time needed to pay the Remainder Signing Payment. The Initial Signing Payment and the Remainder Signing Payment are subject to escalation as provided in Section VIII (Payment Escalation) below.

VIII. PAYMENT ESCALATION

- A. The "Beginning Index" (BI) for all adjustment dates is the Consumer Price Index that is published for October, 2011. The "Extension Index" (EI) is the Consumer Price Index published for the October immediately preceding the then current adjustment date. The "Escalation Factor" (EF) for all adjustment dates is the increase in the Consumer Price Index as determined by dividing the Extension Index by the Beginning Index as shown in the following equation:

$$EF = EI/BI$$

If the EF for any adjustment date is less than the EF of the previous year adjustment date, the EF of the previous year adjustment date is to be used for calculating the

adjusted payment. If the manner in which the Bureau of Labor Statistics determines the Consumer Price Index is materially revised, the Parties shall make an adjustment in the revised index which will produce a result equivalent, as nearly as possible, to that which would have been obtained if the Consumer Price Index had not been so revised. If the Consumer Price Index becomes unavailable to the public or if the equivalent data is not readily available to enable the Parties to make the calculations referred to herein, then there shall be substituted therefore a comparable index, reasonably acceptable to all Parties, based on the changes in the cost of living or purchasing power of the consumer dollar, published by an agency of the federal government, or in the absence thereof, by a nationally recognized financial reporting service.

B. At the end of any accrual period, the accrued amount is escalated using the immediately prior October CPI value for the Extension Index.

1. That portion of the accrued amount resulting from lease, community, or scholarship payments will be escalated according to the following equation:

$$\text{Escalated Payment} = (\text{accrued amount})(EF).$$

2. That portion of the accrued amount resulting from Additional Payments will be escalated according to the following equation:

$$\text{Escalated Payment} = (\text{accrued amount})(1 + 25\%(EF-1))$$

C. The escalated Lease Payment shall be calculated each Lease Year prior to the Lease Payment due date (each an "adjustment date") commencing with the first Lease Payment paid to the Navajo Nation, after the accrued Lease Payment amount has been paid, to an amount equal to \$9,000,000 multiplied by the Escalation Factor as shown in the following equation:

Escalated Lease Payment = \$9,000,000 X Escalation Factor.

D. The Additional Payment shall be escalated:

1. For the Additional Payments that were accrued during the Accrual Period, add all the Additional Payments accrued but not paid and multiply this value by one (1) plus twenty-five percent (25%) of the Escalation Factor minus one (1), as shown in the following equation:

Escalated Additional Payment = Accrued Additional Payment X (1 + 25%(EF-1))

Where the Extension Index is equal to the latest available October CPI value at the time the accrued payment is due.

2. For the Additional Payments that occur after the Accrual Period, but prior to the Effective Date, multiply the amount of one million eight hundred ninety-nine thousand six hundred seventy-two dollars (\$1,899,672.00) per quarter by one (1) plus twenty-five percent (25%) of the Escalation Factor minus one (1), as shown in the following equation:

Escalated Additional Payment = \$1,899,672 X (1 + 25%(EF-1))

Where the Extension Index is equal to the latest available October CPI value at the time the quarterly Additional Payment is due.

3. For the Additional Payments that occur after the Effective Date but prior to December 23, 2019, add the Additional Payments due by the Non-U.S. Lessees (\$1,899,672.00) to the amount attributable to the United States' Share (\$609,802.00) and then multiply that value (\$2,509,474) by one (1) plus twenty-five percent (25%) of the Escalation Factor minus one (1), as shown in the following equation:

Escalated Additional Payment = \$2,509,474 X (1 + 25%(EF-1))

Where the Extension Index is equal to the latest available October CPI value at the

time the quarterly Additional Payment is due.

4. For the Additional Payments that occur after December 22, 2019, multiply the amount of eight million five hundred thousand dollars (\$8,500,000.00) per quarter by one (1) plus twenty-five percent (25%) of the Escalation Factor minus one (1), as shown in the following equation:

$$\text{Escalated Additional Payment} = \$8,500,000 \times (1 + 25\%(EF-1))$$

Where the Extension Index is equal to the latest available October CPI value at the time the quarterly Additional Payment is due.

- E. The Initial Signing Payment shall be escalated at the time of payment (the "adjustment date") to an amount equal to:

$$\text{Initial Signing Payment} = (\$243,000)(EF) + (757,000(1 + 25\%(EF-1)))$$

The Remainder Signing Payment shall be escalated at the time of payment (the "adjustment date") to an amount equal to:

1. The portion of the Remainder Signing Payment that is determined pursuant to Exhibit 3 and annotated as "Lse Pmts (100%)," is multiplied by the Escalation Factor as shown in the following equation:

$$\begin{aligned} \text{Escalated Payment (attributable to Lease Payments)} &= \text{"Lse} \\ &\text{Pmts (100%)" Amount} \times EF. \end{aligned}$$

2. The portion of the Remainder Signing Payment that is determined pursuant to Exhibit 3 and annotated as "Addl Pmts (25%)," is multiplied by one (1) plus twenty-five percent (25%) of the Escalation Factor minus one (1), as shown in the following equation:

$$\begin{aligned} \text{Escalated Payment (attributable to Additional Payment)} &= \\ &\text{"Addl Pmts (25%)" Amount} \times (1 + 25\%(EF-1)). \end{aligned}$$

The two values calculated in subparagraph 1 and 2 above are added together and result in the "Remainder Signing Payment", which shall be paid according to Section VII (United States Signing Payment).

IX. TERMINATION; TERMINATION OF PAYMENTS

- A. Except in the case of a Force Majeure Event, if Lessees determine that they will cease operation of one or more units at NGS prior to the expiration of the Term, the Operating Agent shall provide preliminary written notice ("Notice of Planned Cessation") to the Navajo Nation at least two (2) years prior to the permanent cessation of commercial operation of such unit(s) or NGS. For ninety (90) days after providing the Navajo Nation a Notice of Planned Cessation, Lessees shall consider proposals by the Navajo Nation for modified terms and conditions of the Lease to provide for continued commercial operations at NGS. If the Navajo Nation is not a Participant at the time of the Notice of Planned Cessation, Lessees shall provide the Navajo Nation data and other information that Lessees collectively are utilizing to make the determination to cease commercial operation of NGS, so long as the Navajo Nation enters into a mutually acceptable non-disclosure agreement to govern the disclosure of such data and information. Individual Participants and the United States are not required to provide proprietary data and other information to the Navajo Nation that they would otherwise not share with the other Participants. Any time following the end of the ninety (90) day period, the Operating Agent shall provide written notice to the Navajo Nation of Lessees' final decision regarding cessation or continuation of commercial operation at NGS (the "Notice of Decision"). Nothing contained in this Section or in this Amendment shall be deemed to create any obligation by Lessees to accept any proposals by the Navajo Nation or any obligation by the Navajo Nation to provide a

proposal for the continued operation of the Navajo Project.

- B. The Operating Agent shall provide written notice to the Navajo Nation upon cessation of commercial operations at NGS (the "Notice of Cessation"). Upon compliance with provision of all applicable notices, Lessees may terminate the Lease at any time prior to the expiration of the Term by providing written notice of Lease termination to the Navajo Nation (the "Notice of Lease Termination"). The Notice of Lease Termination shall state the planned date for termination of the Lease, upon which date the terms of Section XIV (Removal of Improvements; Restoration) are applicable.
- C. If some or all of the Participants owning interests in the Navajo Western or Navajo Southern transmission systems of the Navajo Project wish to continue the operation and use of either or both transmission systems ("Continued Transmission System Participants") after a Notice of Decision to cease commercial operation of NGS has been sent, the Continued Transmission System Participants shall provide written notice of such intent to the Navajo Nation. The Continued Transmission System Participants and the Navajo Nation shall negotiate in good faith for new terms and conditions to support the continued operation of the transmission systems or portion thereof.
- D. Lessee's are obligated to continue making Payments, once started, until that obligation is terminated as follows: (1) Lessee's obligation to pay Additional Payments to the Navajo Nation shall immediately terminate upon the provision of the Notice of Cessation; (2) Lessee's obligation to pay the Lease Payments, payments to the Chapter Fund and payments to the Scholarship Fund shall terminate on the earlier of (a) the date of completion of removal of improvements and restoration of the Leased Lands and 323

Grants premises in accordance with Section XIV (Removal of Improvements; Restoration), or (b) December 23, 2044.

- E. This Section shall survive the termination or expiration of the Lease.

X. REVOCATION OF AMENDMENT

- A. On and after the date that the Navajo Nation approves and executes this Amendment, the Navajo Nation agrees not to revoke its approval and execution of this Amendment or its consent to any of the 323 Grants listed in Exhibits 1 and 2; provided, however, that the following provisions shall apply if the Navajo Nation breaches this provision:

1. If the Navajo Nation revokes its approval and execution of this Amendment or its consent to any of the listed 323 Grants before all of the Non-U.S. Participants have executed this Amendment, the Non-U.S. Participants shall not be required to pay any Payments, accrued or otherwise, provided for in this Amendment.
2. If the Navajo Nation revokes its approval and execution of this Amendment or its consent to any of the listed 323 Grants after execution of this Amendment by all Non-U.S. Participants but prior to the Effective Date, the Navajo Nation shall, within thirty (30) days of such revocation, refund to the Non-U.S. Participants all Payments that the Non-U.S. Participants have paid pursuant to this Amendment prior to such revocation, less the amount that would have been paid under the Lease. This refund obligation shall survive the revocation of approval of this Amendment by the Navajo Nation.

- B. Prior to the Effective Date, the Non-U.S. Participants may revoke their approval of this Amendment by written notice to the Navajo Nation (a "Revocation Notice"), whereupon this Amendment shall become null and void. If the Non-U.S. Participants revoke their execution of this Amendment prior to the Effective Date, the Navajo Nation shall be permitted to retain all Payments made prior to the Revocation Notice by the Non-U.S. Participants pursuant to this Amendment.

- C. On and after the Effective Date, this Amendment and the Lease may be terminated only as provided in Section IX of this Amendment.

XI. NAVAJO NATION OWNERSHIP OF THE NAVAJO PROJECT

- A. If, with the consent of the Participants, SRP or any other current Lessee and LADWP agree to and complete the purchase and sale of all or a portion of LADWP's ownership interest in the Navajo Project prior to December 23, 2019, the Navajo Nation, acting on its own behalf or through an enterprise or authority designated by the Navajo Nation, shall have the option (the "Navajo Nation Purchase Option") to acquire an ownership interest of up to 170 MWs in the Navajo Project of the share of LAWDP acquired by SRP or any other current Lessee (the "Navajo Nation Interest"). The Navajo Nation Interest shall include a share of the transmission rights purchased by SRP or any other current Lessee, where such share is determined by dividing the MWs of the Navajo Nation Interest by the MWs SRP or any other current Lessee acquires from LADWP. The Navajo Nation Purchase Option may be exercised by the Navajo Nation following the date that LADWP's ownership interest is transferred to SRP or any other current Lessee in accordance with the same terms, conditions and procedures in effect for ownership interest transfers between the Lessees at the time of the transfer of any portion of the LAWDP ownership to other Lessees. Future agreements, including but not limited to the Navajo Project Co-Tenancy Agreement modifications, for Navajo Nation direct ownership in the Navajo Project are required to be mutually acceptable by the parties to the agreement, including existing Participant release of liability for the seller.
- B. If the Navajo Nation elects to exercise the Navajo Nation Purchase Option, the transfer of ownership shall occur in two phases. Separate phases are necessary to address requirements and options pre- and post-Effective Date. Future agreements for either the

"virtual ownership" or the "direct ownership" phases described below must be mutually acceptable to the applicable parties thereto.

1. The first phase shall be a "virtual ownership" agreement that provides an ownership-like cost/benefit structure. In this phase, the Navajo Nation shall pay its share of the total Navajo Project costs that serve as the basis for charges to the other Participants and would receive the applicable MWs of capacity it will be purchasing or its respective percentage of output during unit curtailments or outages. Delivered energy would be subject to the same operational risks as any other Participant.
2. Upon the receipt of all regulatory, board and other approvals of the transfer of the acquired interest required by any Participant or the Navajo Nation, including any required Secretary Approval, the Navajo Nation may convert the "virtual ownership" into "direct ownership" of the Navajo Nation Interest. If the Navajo Nation elects to convert its "virtual ownership" interest into "direct ownership", the purchased interest shall be subject to the same Navajo Project agreements' requirements as any other Participant, including existing Participant release of liability for the seller. Each existing Participant must approve the release of the seller(s) and obtaining the release would be a condition of closing the Navajo Nation Interest. Upon the transfer of the ownership interest in the Navajo Project to the Navajo Nation, the Navajo Nation shall assume all the rights and responsibilities of Navajo Project ownership as provided in the various Navajo Project agreements then in effect.

- C. If the Navajo Nation elects not to exercise the Navajo Nation Purchase Option, then the Lessees shall provide the Navajo Nation, acting on its own behalf or through an

enterprise or authority designated by the Navajo Nation, a right of first refusal option (the "Navajo Nation Right of First Refusal Option") to purchase any proposed Navajo Project ownership interest for sale by any Lessee on substantially the same terms and conditions as a proposed sale that occurs on or after the Effective Date of this Amendment. If a Lessee proposes to sell all or a portion of its ownership interest in the Navajo Project, other than the portion SRP owns for the use and benefit of the United States, such Lessee shall provide written notice to the Navajo Nation thereof stating the terms and conditions on which it intends to sell such ownership interest. The exercise of the Navajo Nation Right of First Refusal Option and subsequent transfer of the proposed Navajo Project ownership interest shall be in accordance with the same terms, conditions and procedures then in effect for ownership interest transfers between the Lessees. For purposes of exercising the Navajo Nation Right of First Refusal Option, the Navajo Nation shall be given an ownership proxy of NGS of 7.5%. Future agreements that will be made for direct ownership are required to be mutually acceptable by the parties to the agreement, including existing Participant release of liability for the seller.

- D. The Participants shall provide the Navajo Nation, pursuant to an executed non-disclosure agreement, data and other information regarding NGS costs and operations necessary to help the Navajo Nation decide whether to exercise the Navajo Nation Purchase Option or Navajo Nation Right of First Refusal Option. Individual Participants and the United States are not required to provide proprietary data and other information to the Navajo Nation that they would otherwise not share with the other Participants.

XII. COMPLIANCE WITH AND ADDITIONAL AMENDMENTS TO THE LEASE; FUTURE COOPERATION TO RESOLVE ISSUES

- A. Except as specifically modified by this Amendment, all of the terms and conditions of the Lease shall remain in full force and effect. In the event of any conflict between the terms of the Lease and the terms of this Amendment, the terms of this Amendment shall govern and control. The provisions of this Section XII shall survive the expiration or termination of the Lease and 323 Grants.
- B. Without limiting the foregoing, the provisions in Section 16 of the Lease addressing "Operation of Navajo Generating Station" shall remain effective through the date the removal of the improvements and restoration of the Reservation Lands as set forth in Section XIV (Removal of Improvements; Restoration) is completed.
- C. Section 10 of the Lease is amended to delete subsections (a), (b) and (c) such that Section 10 of the Lease shall now read as follows:
- The Lessees shall comply with all air pollution laws and regulations under federal or state laws now or hereafter in force.*
- D. Section 18 of the Lease is deleted in its entirety and replaced with the following language:
- Employment at the Navajo Generating Station will be based on qualifications without regard to race, color, creed, religion, national origin, disability, sex, or age, except that to the extent allowed by law preference will be given to qualified Navajos. Navajo Generating Station also will give preference to qualified Navajos in selection for apprenticeship program openings to the extent allowed by law. The Parties recognize that in certain circumstances the need for critical or specialized skills at the Navajo Generating Station will require selecting the most qualified person whether or not they are Navajo. In the event that federal law prohibits Lessees from providing employment preference based on tribal affiliation, Lessees will follow Indian*

preference, as described in this agreement.

- E. Section 28 of the Lease is amended to delete subsections (a) and (b) such that Section 28 of the Lease shall now read as follows:

The Lessees shall comply with all water pollution control laws and regulations under federal, state or county jurisdiction, now or hereafter in force.

- F. Section 36 of the Lease is deleted in its entirety.

- G. The Parties agree to use commercially reasonable efforts to resolve issues that arise during the Term, including, but not limited to, the use of Voluntary Compliance Agreements.

- H. The last sentence of Section 12(e) of the Lease is amended to read as follows:

Lessees agree to build such dikes and ditches to maintain the ash within the Ash Disposal Area and Lessees shall cover to a thickness of twelve (12) inches, unless federal requirements mandate a greater degree of thickness, of earth any areas containing ash and seed such earth cover in order to prevent wind and water erosion.

- I. Exhibit 9, List of Permanent Structures, to the Indenture of Lease is amended to add the following at the ending of the existing list of structures:

Lake Pump Station and two 30-inch water delivery pipes between the Lake Pump Station and the Metering Pit located at the Plant Site.

XIII. ASSIGNMENTS

- A. The Parties hereby amend the provisions of Section 13 of the Lease to add the following to the existing circumstances in which each Lessee may transfer or assign its rights and interests in the Lease without need for consent of the Navajo Nation or the Secretary at any time:

1. to the Navajo Nation, its enterprises and authorities; or

2. to an Affiliate.

- B. Except as provided in Section 13 of the Lease, as amended by this Amendment, all other assignments shall be subject to the prior written consent of the Navajo Nation, which consent shall not be unreasonably withheld or delayed, prior to approval by the Secretary. The Navajo Nation shall not charge any fee for reviewing a requested assignment except for routine administrative processing fees.
- C. Within thirty (30) days of any assignment permitted without Navajo Nation consent in the Lease, as amended by this Amendment, the assignor Lessee will provide the Navajo Nation with written notice indicating the parties to the assignment, date of assignment and relationship between the assignor and assignee.

XIV. REMOVAL OF IMPROVEMENTS; RESTORATION

- A. Upon the provision of a Notice of Lease Termination by the Lessees, or other termination or expiration of the Lease, the removal and restoration of the Leased Lands shall be in accordance with the provisions of Section 12 of the Lease, provided that removal and restoration shall be limited to those actions required by Section 12 of the Lease and the applicable laws and regulations of the United States in force at the time of decommissioning of the Navajo Project.
- B. The Navajo Nation acknowledges and agrees that the removal of improvements and restoration of the 323 Grants premises shall be completed in accordance with and limited to those actions required by the 323 Grants and the applicable laws and regulations of the United States, provided such removal and restoration activities shall be completed no later than December 23, 2045, subject to Sections XIV(D) and (E) below.
- C. If the removal of improvements and restoration of Leased Lands and the 323 Grants premises extends beyond the expiration of the Term of the Lease, Lessees shall have

until December 23, 2045 to complete removal of improvements and restoration of the Leased Lands and 323 Grants premises. In consideration of the foregoing, Lessees shall continue to pay the Lease Payments, Local Community Involvement Payments and Scholarship Payments until the earlier of (1) the date of completion of removal of improvements and restoration of the Leased Lands and 323 Grants premises, or (2) December 23, 2044.

D. If Lessees determine that they cannot complete removal and restoration on the Leased Lands and 323 Grants by December 23, 2045, Lessees and the Navajo Nation shall commence good faith negotiations for compensation, to be paid to the Navajo Nation for prospective periods of occupation, use or burden of the Leased Lands and 323 Grants.

E. Lessees shall provide written notice to the Navajo Nation at least eighteen (18) months prior to the planned start of removal of any transmission facilities (the "Transmission Facility Removal Notice").

1. Within thirty (30) days of receipt of a Transmission Facility Removal Notice, the Navajo Nation may request in writing that Lessees provide the Navajo Nation, at Lessees' sole cost and expense, a Phase I Environmental Site Assessment (the "Phase I ESA") of the affected 323 Grant(s) consistent with ASTM E1527 and U.S. Environmental Protection Agency's All Appropriate Inquiry rule.
2. Lessees shall provide the Phase I ESA to the Navajo Nation within six (6) months of the Navajo Nation's request to provide a Phase I ESA.
3. Within six (6) months of the delivery of the Phase I ESA to the Navajo Nation, the Navajo Nation shall provide written notice to Lessees that

Lessees (a) should proceed with removal and restoration of the transmission facilities associated with the 323 Grant(s), or (b) should instead transfer ownership to the Navajo Nation of all or any specifically identified improvements then existing on the right of way associated with the 323 Grants. In the event no notice is given, the Navajo Nation shall be deemed to have notified Lessees to proceed with removal of the transmission facilities and restoration of the property with the 323 Grant(s).

4. If the Navajo Nation provides, or is deemed to have provided, notice to Lessees that removal of the transmission improvements and restoration of the associated 323 Grants is required, Lessees shall complete removal and restoration as set forth in this Section XIV (Removal of Improvements; Restoration).

- F. If Lessees are required to conduct post-closure monitoring or similar activities on the Reservation Lands, the Navajo Nation shall provide access to Lessees and their contractors for such activities at no cost to Lessees and their contractors except for nominal administrative processing fees.
- G. The provisions of this Section shall survive the expiration or termination of the Lease and 323 Grants.

XV. CONSENT TO GRANTS OF RIGHT-OF-WAY AND EASEMENT

- A. The Navajo Nation hereby provides its consent to the issuance or extension by the Secretary of all 323 Grants required by the Navajo Project and associated facilities, including the transmission system, listed on Exhibits 1 and 2 attached hereto, through December 22, 2044 and as provided in Section XIV (Removal of Improvements; Restoration). The Navajo Nation hereby consents to the inclusion of the following language in all 323 Grants required by the Navajo Project and associated facilities,

including the transmission system in substantially the form stated below:

"All facilities, structures, improvements, equipment and property (other than nonremovable buildings) of whatever kind and nature constructed, placed or affixed by the grantees of the 323 Grants on the granted lands pursuant to rights acquired by the grant of rights-of-way, expressly including but not being limited to the Navajo Generating Station, all facilities and structures used therewith and related thereto, all rail transportation facilities, transmission facilities and the related switchyards therefor (hereinafter called "removable property"), as against the United States, the Secretary, the Navajo Nation and all other parties and persons whomsoever (including without limitation any party acquiring any interest in the granted lands or any interest in or lien, claim or encumbrance against any of such facilities, structures, improvements, equipment and property of whatever kind and nature), shall be deemed to be and remain personal property of the grantees of the 323 Grants, not affixed to the realty, and, subject to Section XIV(E) of the Lease Amendment No. 1, removable by the grantees of the 323 Grant at any time prior to or within twenty-four (24) months after expiration or earlier termination for any reason of the §323 grant. Subject to Section XIV(B) of the Lease Amendment No. 1, the grantees of the 323 Grants may remove, at or prior to twenty-four (24) months following the expiration or earlier termination of the §323 grant, all removable property except as set forth in the Lease and any amendments to the Lease."

- B. The Navajo Nation agrees to cooperate with Lessees to complete all necessary federal and state environmental reviews and obtain all necessary regulatory approvals, and shall support Lessees and the Navajo Project in any National Environmental Policy Act or other similar impact analysis with the Department of Interior, other federal or state

agencies or the Navajo Nation. In no event shall the Navajo Nation take a position with the Department of Interior or other agency that is adverse to Lessees with respect to the approval of this Amendment or the issuance of the listed 323 Grants. The foregoing is not intended to preclude the Navajo Nation or any person from participating in or commenting on any necessary environmental reviews.

- C. It is the Parties' intention that the Navajo Project and the Four Corners Project have all 323 Grants necessary to operate in the event one of the plants ceases operation. The Parties acknowledge and consent to the required transfers of then- existing transmission 323 Grants.
- D. The Navajo Nation acknowledges and agrees that the users of the Moenkopi Switchyard shall continue to own and operate those assets for the benefit of either or both the Navajo Southern Transmission System and the Moenkopi – Eldorado Transmission Line even if there is a partial decommissioning of either transmission system or if there is a need to transfer the facilities between such users.
- E. The Navajo Nation hereby consents to the inclusion of terms in the new or renewed 323 Grants required by either the Four Corners Project or the Navajo Project that will provide a right to transfer 323 Grants or facilities listed in Section XV(E)(1) and XV(E)(2) below between the Participants and the participants in the Four Corners Project ("Four Corners Participants") without further approval by either the Secretary or the Navajo Nation in the following instances:
 - 1. In the event the Four Corners Project permanently ceases to operate and the Navajo Project continues to operate, the Navajo Nation agrees that the Four Corners Participants may transfer to the Participants all of the facilities in the Moenkopi Switchyard and the portion of the 500 kV Eldorado transmission line

west from the Moenkopi Switchyard to the western boundary of the Navajo Nation (the "Moenkopi-Eldorado Transmission Line"), notwithstanding any provision otherwise in Amendment and Supplement No. 2 and Amendment and Supplement No. 3 to Supplemental and Additional Indenture of Lease between the Navajo Nation and the Four Corners Participants (the "Four Corners Lease Amendment"). Upon transfer of the Moenkopi Switchyard and Moenkopi-Eldorado Transmission Line facilities, as provided in this Section, the Lease Payment will be adjusted upward by an amount equal to \$1,600.00 per acre escalated according to Section VIII(C) (Payment Escalation) multiplied by the number of acres included in the 323 Grants for the Moenkopi Switchyard and the Moenkopi-Eldorado Transmission Line set forth in Exhibit 2 attached hereto.

2. In the event the Navajo Project permanently ceases to operate and the Four Corners Project continues to operate, the Participants in the Navajo Project, upon agreement by the Four Corners Participants to grant access to the Navajo Nation to such 323 Grants and facilities on the 323 Grant according to applicable FERC rules then in effect, may transfer the 323 Grant and facilities for the Navajo Southern Transmission System from one mile east of the Moenkopi Switchyard to the southern border of the Navajo Nation to the Four Corners Participants. The 323 Grant shall expire on July 6, 2041 or upon the Four Corners Project permanently ceasing operations, whichever occurs earlier. The 323 Grant for this portion of the line will include a condition that any transfer of the 323 Grant to the Four Corners Participants will include an annual payment of \$1600 per acre escalated according to Section VIII (Payment Escalation) multiplied by the number of acres included in the 323 Grants for

the Navajo Southern Transmission System from one mile east of the Moenkopi Switchyard to the southern border of the Navajo Nation.

3. Upon expiration of the 323 Grants transferred between the Four Corners Participants and the Participants pursuant to Sections XV(E)(1) and XV(E)(2) above, the removal of improvements or transfer of facilities located within the 323 Grants shall occur in conformity with the applicable lease, as amended, for the last operating plant (either NGS or Four Corners Project) and the then-applicable 323 Grant.
4. In consideration for the Navajo Nation's consent to the terms and conditions of this Section XV, the Navajo Nation shall have the right, subject to applicable FERC rules then in effect, to access the lines and switchyard(s) located on any 323 Grant that is transferred as a result of this Section, and which are associated with the Navajo Project for the purpose of transmitting electricity generated from projects sited on Navajo Nation lands or projects in which the Navajo Nation has an ownership interest.

XVI. LOCAL COMMUNITY INVOLVEMENT

- A. Upon the execution of this Amendment by the Non-U.S. Participants, a fund (the "Chapter Fund") shall be created and administered by Lessees for the benefit of the NGS Community Chapters. Upon execution of this Amendment by the Navajo Nation, 75.7% of two percent (2%) of nine million dollars (\$9,000,000.00) (which is \$136,260.00) shall begin to accrue during the Lease Payment Accrual Period. The accrued proceeds shall be escalated according to Section VIII(B) (Payment Escalation) and paid into the Chapter Fund within thirty (30) days after the date that the Navajo Nation and all Non-U.S. Participants execute this Amendment.

Notwithstanding anything contained herein to the contrary, if this Amendment is not approved and executed by all of the Non-U.S. Participants on or before December 23, 2018, then no accrued Non-U.S. Participant portion of the Lease Payments intended for the Chapter Fund shall be due and owing by the Non-U.S. Participants to the Navajo Nation.

- B. After the Navajo Nation and all Non-U.S. Participants have executed this Amendment, SRP shall pay an amount equal to 75.7% of two percent (2%) of the then current Lease Payment into the Chapter Fund each Lease Year at the time of payment of the Lease Payment until the earlier of: (1) December 23, 2018; or (2) the Effective Date.
- C. If and when SRP pays the Remaining Signing Payment amount described in Section VII (United States Signing Payment) that portion of the payment that is attributable to the Chapter Fund for periods prior to the Effective Date shall be paid into the Chapter Fund. If and when the Effective Date occurs, SRP shall pay an amount equal to two percent (2%) of the then current Lease Payment into the Chapter Fund each Lease Year at the time of payment of the Lease Payment until termination of the Lease and compliance with Section XIV (Removal of Improvements; Restoration) by the Lessees.

XVII. SCHOLARSHIP

- A. Upon the execution of this Amendment by the Non-U.S. Participants, a fund (the "Scholarship Fund") shall be created and administered in cooperation with Lessees by the Office of Navajo Nation Scholarship and Financial Assistance for the use of awarding scholarships and financial assistance to eligible applicants ("Navajo Generating Station Scholarships"). Upon execution of this Amendment by the Navajo Nation, 75.7% of 2.78% of nine million dollars (\$9,000,000.00) (which is

\$189,401.40) shall begin to accrue during the Lease Payment Accrual Period. The accrued proceeds shall be escalated according to Section VIII(B) (Payment Escalation) and paid into the Scholarship Fund within thirty (30) days after the date that the Navajo Nation and all Non-U.S. Participants execute this Amendment. Notwithstanding anything contained herein to the contrary, if this Amendment is not approved and executed by all of the Non-U.S. Participants on or before December 23, 2018, then no accrued Non-U.S. Participant portion of the Lease Payments intended for the Scholarship Fund shall be due and owing by the Non-U.S. Participants to the Navajo Nation.

- B. After the Navajo Nation and all Non-U.S. Participants have executed this Amendment, SRP shall pay an amount equal to 75.7% of 2.78% of the then current Lease Payment into the Scholarship Fund each Lease Year at the time of payment of the Lease Payment until the earlier of: (1) December 23, 2018; or (2) the Effective Date.
- C. If and when SRP pays the Remaining Signing Payment amount described in Section VII (United States Signing Payment), that portion of the payment that is attributable to the Scholarship Fund for periods prior to the Effective Date shall be paid into the Scholarship Fund.
- D. If and when the Effective Date occurs, SRP shall pay an amount equal to 2.78% of the then current Lease Payment into the Chapter Fund each Lease Year at the time of payment of the Lease Payment until the termination of the Lease and compliance with Section XIV (Removal of Improvements; Restoration) by the Lessees.
- E. The amounts paid into the Scholarship Fund pursuant to this Section are in addition to the scholarship amounts paid by NGS through Peabody Western Coal Company.

XVIII. NO THIRD PARTY BENEFICIARIES

No Persons other than the Parties and the successors and assigns of such Parties, shall have any rights, privileges, waivers, obligations or remedies whatsoever under the Lease or this Amendment.

XIX. APPROVAL UNDER 25 USC §415(a)

The Parties acknowledge and agree that this Amendment shall not be effective until approved by the Secretary in accordance with Title 25, United States Code Section 415(a).

XX. COUNTERPARTS

This Amendment may be executed in one or more counterparts, each of which shall be deemed an original but which together shall constitute one and the same instrument.

XXI. EFFECT OF AMENDMENT

Except as specifically modified by this Amendment, all of the terms and conditions of the Lease remain in full force and effect. In the event of any conflict between the terms of the Lease and the terms of this Amendment, the terms of this Amendment shall govern and control.

XXII. INCORPORATION OF PRIOR AGREEMENTS

This Amendment and the Lease contain the entire understanding of the parties hereto with respect to the subject matter hereof, and no prior or other written or oral agreement or undertaking pertaining to any such matter shall be effective for any purpose.

XXIII. MODIFICATION OF AMENDMENT

This Amendment may not be modified, nor may any right or obligation hereunder be waived orally, and no such amendment or modification shall be effective for any purpose unless it is in writing and signed by all Parties and approved as required by the United States.

XXIV. SEVERABILITY OF PROVISIONS

If any one or more of the covenants, agreements or provisions herein contained shall be held contrary to any express provisions of law or contrary to the policy of such law, though not

expressly prohibited, or against public policy, or shall for any reason whatsoever be invalid, then such covenants, agreements or provisions shall be null and void and shall be deemed separable from the remaining covenants, agreements or provisions and shall in no way affect the validity of any of the other provisions hereof.

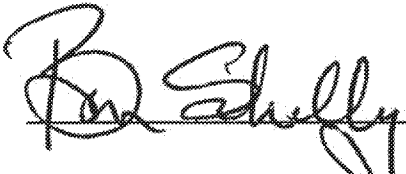
XXV. AUTHORITY

All Non-U.S. Participants (excluding SRP on behalf of the U.S. prior to receipt of Secretary Approval) have the legal authority to, and are not prohibited by law, from executing this Amendment; provided, however, that the effectiveness of this Amendment shall be subject to Secretary Approval and the provisions of Section X (Revocation of Amendment).

[SIGNATURE PAGES FOLLOW]

IN WITNESS WHEREOF, the Parties hereto have caused this Amendment to be signed in their behalf by their duly authorized officers as of the date first above set out.

THE NAVAJO NATION

By: 
Name: Ben Shelly
Title: President

ARIZONA PUBLIC SERVICE COMPANY

By: _____
Attest: _____ Name: _____
Title: _____ Title: _____

DEPARTMENT OF WATER AND POWER OF
THE CITY OF LOS ANGELES

By: The Board of Water and Power Commissioners

By: _____
Attest: _____ Name: _____
Title: _____ Title: _____

NV ENERGY

By: _____

Attest: _____

Name: _____

Title: _____

Title: _____

SALT RIVER PROJECT
AGRICULTURAL IMPROVEMENT AND
POWER DISTRICT,
FOR THE USE AND BENEFIT OF SRP

By: _____

Attest: _____

Name: _____

Title: _____

Title: _____

TUCSON ELECTRIC POWER
COMPANY

By: _____

Attest: _____

Name: _____

Title: _____

Title: _____

SALT RIVER PROJECT AGRICULTURAL
IMPROVEMENT AND POWER DISTRICT,
FOR THE USE AND BENEFIT OF THE
UNITED STATES

By: _____

Attest: _____

Name: _____

Title: _____

Title: _____

Approval of this Amendment is hereby given pursuant to Title 25, United States Code Section 415(a) and consent is hereby given to SRP to execute the Amendment for the use and benefit of the United States:

By: _____

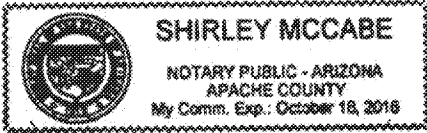
Name: _____

Title: _____

ACKNOWLEDGEMENTS

STATE OF ARIZONA)
County of APACHE) ss.

The foregoing instrument was acknowledged before me this 30 day of JULY,
_____, by BEN SHELLEY, the PRESIDENT of the
Navajo Tribal Council of The Navajo Nation, on behalf of The Navajo Nation.



Shirley McCabe
Notary Public

My commission expires:

10-18-16

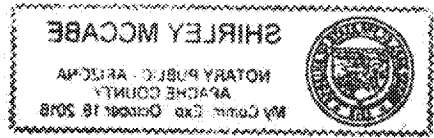
STATE OF ARIZONA)
) ss.
County of _____)

The foregoing instrument was acknowledged before me this ____ day of _____, _____, by _____, the _____ of the ARIZONA PUBLIC SERVICE COMPANY, a corporation, on behalf of said corporation.

Notary Public

My commission expires:

NGS Lease Amendment 1 as approved by NNC 7/18/2013 (Legislation # 0177-13)



STATE OF CALIFORNIA)
) ss.
County of _____)

The foregoing instrument was acknowledged before me this ____ day of _____, _____, by _____, the _____ of THE BOARD OF WATER & POWER COMMISSION OF THE DEPARTMENT OF WATER AND POWER OF THE CITY OF LOS ANGELES, a department organized and existing under the Charter of the City of Los Angeles, a municipal corporation of the State of California, on behalf of said corporation.

Notary Public

My commission expires:

STATE OF NEVADA)
) ss.
County of _____)

The foregoing instrument was acknowledged before me this ____ day of _____, _____, by _____, the _____ of NV ENERGY, a Nevada corporation, on behalf of said corporation.

Notary Public

My commission expires: _____

STATE OF ARIZONA)
) ss.
County of _____)

The foregoing instrument was acknowledged before me this ____ day of _____, _____, by _____, the _____ of the SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT, an Arizona agricultural improvement district, on behalf of said district.

Notary Public

My commission expires: _____

STATE OF ARIZONA)
) ss.
County of _____)

The foregoing instrument was acknowledged before me this ____ day of _____, _____, by _____, the _____ of the TUCSON ELECTRIC POWER COMPANY, an Arizona corporation, on behalf of said corporation.

Notary Public

My commission expires:

STATE OF ARIZONA)
) ss.
County of _____)

The foregoing instrument was acknowledged before me this ____ day of _____, _____, by _____, the _____ of the SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT, an Arizona agricultural improvement district, on for the use and benefit of the United States.

Notary Public

My commission expires:

EXHIBIT 1

323 GRANTS

323 Grant Description	Acres
Plant Site	1,020.13
Ash Disposal Site	764.87
Road between Plant site and Ash Disposal	30.19
Lake Pump Station	4.47
Road between Pump Station and N228	3.13
Piping and Road between Plant and Lake Pump	40.06
Power Line to Lake Pump	9.06
Coal conveyor from mine to Loading station	66.32
Coal Loading station near the Mine	99.88
Railroad Path	1,520.47
Western Transmission System	41.22
Southern Transmission System	3,862.579
230KV Tie Line	1.0239
Preston Mesa Communications Site	0.22
Zilnez Mesa Communication Site	2.37
Total	7,466*
* Note: The Lease Payment of \$9,000,000.00 per Lease Year is for the entire Navajo Project, and includes 323 Grants for up to and including 7,472 acres.	

EXHIBIT 2

Moenkopi-Eldorado Switchyard and Transmission Line 323 Grants

ROW Description	Acres
Moenkopi Switchyard*	25
Moenkopi – Eldorado Transmission Line*	327.27
Total	352.27

*Payment for these 323 Grants will not begin until the Four Corners Participants transfer the facilities on these 323 Grants to the NGS Participants and will be made in accordance with Section XV(E)(a), (Consent to Grants of Right-Of-Way and Easement).

EXHIBIT 3

United States Remainder Signing Payment

Upon the Effective Date of the Amendment, SRP shall pay the Navajo Nation the Initial Signing Payment (which is \$1,000,000.00) escalated according to Section VIII (Payment Escalation). The Remainder Signing Payment will be escalated and paid as soon as possible but no later than 18 months after the Effective Date. SRP and the Navajo Nation will collaborate with the USBR and the CAWCD on efforts to minimize the time needed to make the Remainder Signing Payment.

See Exhibit 3-(cont.) for an example of the escalation calculation of the Remainder Signing Payment.

(Only the amount listed below the date of Navajo Nation approval and across from the Effective Date is paid. The amounts shown are not additive and are not escalated)

Effective Date		Date Approved by Navajo Nation					
		Jan-Apr 2013	May-Jul 2013	Aug-Oct 2013	Nov-Dec 2013	Jan 2014	Feb-Apr 2014
Dec 24 2015 - Jan 2016	Remainder Signing Pmt	\$ 15,068,821	\$ 15,250,494	\$ 11,858,969	\$ 10,680,444	\$ 7,984,673	\$ 7,374,871
	Add Pmts (25%)	\$ 6,560,626	\$ 5,341,022	\$ 4,731,220	\$ 4,121,418	\$ 4,121,418	\$ 3,511,615
	Lse Pmts (100%)	\$ 8,508,194	\$ 7,939,472	\$ 7,127,749	\$ 6,559,027	\$ 3,863,256	\$ 3,863,256
Feb - Apr 2016	Remainder Signing Pmt	\$ 15,679,623	\$ 13,690,296	\$ 12,468,771	\$ 11,250,247	\$ 8,594,476	\$ 7,984,673
	Add Pmts (25%)	\$ 7,170,428	\$ 5,950,824	\$ 5,341,022	\$ 4,731,220	\$ 4,731,220	\$ 4,121,418
	Lse Pmts (100%)	\$ 8,508,194	\$ 7,939,472	\$ 7,127,749	\$ 6,559,027	\$ 3,863,256	\$ 3,863,256
May - Jul 2016	Remainder Signing Pmt	\$ 16,288,425	\$ 14,500,098	\$ 13,078,573	\$ 11,900,049	\$ 9,204,278	\$ 8,594,476
	Add Pmts (25%)	\$ 7,730,231	\$ 6,560,626	\$ 5,950,824	\$ 5,341,022	\$ 5,341,022	\$ 4,731,220
	Lse Pmts (100%)	\$ 8,508,194	\$ 7,939,472	\$ 7,127,749	\$ 6,559,027	\$ 3,863,256	\$ 3,863,256
Aug - Oct 2016	Remainder Signing Pmt	\$ 16,898,127	\$ 15,109,900	\$ 13,688,376	\$ 12,509,851	\$ 9,813,080	\$ 9,204,278
	Add Pmts (25%)	\$ 8,390,033	\$ 7,170,428	\$ 6,560,626	\$ 5,950,824	\$ 5,950,824	\$ 5,341,022
	Lse Pmts (100%)	\$ 8,508,194	\$ 7,939,472	\$ 7,127,749	\$ 6,559,027	\$ 3,863,256	\$ 3,863,256
Nov - Dec 23 2016	Remainder Signing Pmt	\$ 17,508,029	\$ 15,719,703	\$ 14,298,178	\$ 13,119,653	\$ 10,423,882	\$ 9,814,080
	Add Pmts (25%)	\$ 8,999,835	\$ 7,780,231	\$ 7,170,428	\$ 6,560,626	\$ 6,560,626	\$ 5,950,824
	Lse Pmts (100%)	\$ 8,508,194	\$ 7,939,472	\$ 7,127,749	\$ 6,559,027	\$ 3,863,256	\$ 3,863,256
Dec 24 2016 - Jan 2017	Remainder Signing Pmt	\$ 19,635,078	\$ 17,846,751	\$ 16,425,226	\$ 15,246,702	\$ 12,550,931	\$ 11,941,129
	Add Pmts (25%)	\$ 8,999,835	\$ 7,780,231	\$ 7,170,428	\$ 6,560,626	\$ 6,560,626	\$ 5,950,824
	Lse Pmts (100%)	\$ 10,635,243	\$ 10,066,520	\$ 9,254,798	\$ 8,686,076	\$ 5,990,304	\$ 5,990,304
Feb - Apr 2017	Remainder Signing Pmt	\$ 20,244,860	\$ 18,456,533	\$ 17,035,029	\$ 15,856,504	\$ 13,160,733	\$ 12,550,931
	Add Pmts (25%)	\$ 9,609,637	\$ 8,390,033	\$ 7,780,231	\$ 7,170,428	\$ 7,170,428	\$ 6,560,626
	Lse Pmts (100%)	\$ 10,635,243	\$ 10,066,520	\$ 9,254,798	\$ 8,686,076	\$ 5,990,304	\$ 5,990,304
May - Jul 2017	Remainder Signing Pmt	\$ 20,854,682	\$ 19,066,355	\$ 17,644,831	\$ 16,466,306	\$ 13,770,535	\$ 13,160,733
	Add Pmts (25%)	\$ 10,219,439	\$ 8,999,835	\$ 8,390,033	\$ 7,780,231	\$ 7,780,231	\$ 7,170,428
	Lse Pmts (100%)	\$ 10,635,243	\$ 10,066,520	\$ 9,254,798	\$ 8,686,076	\$ 5,990,304	\$ 5,990,304
Aug - Oct 2017	Remainder Signing Pmt	\$ 21,464,484	\$ 19,676,157	\$ 18,254,633	\$ 17,076,108	\$ 14,380,337	\$ 13,770,535
	Add Pmts (25%)	\$ 10,829,242	\$ 9,609,637	\$ 8,999,835	\$ 8,390,033	\$ 8,390,033	\$ 7,780,231
	Lse Pmts (100%)	\$ 10,635,243	\$ 10,066,520	\$ 9,254,798	\$ 8,686,076	\$ 5,990,304	\$ 5,990,304
Nov - Dec 23 2017	Remainder Signing Pmt	\$ 22,074,287	\$ 20,285,959	\$ 18,864,435	\$ 17,685,911	\$ 14,990,140	\$ 14,380,337
	Add Pmts (25%)	\$ 11,439,044	\$ 10,219,439	\$ 9,609,637	\$ 8,999,835	\$ 8,999,835	\$ 8,390,033
	Lse Pmts (100%)	\$ 10,635,243	\$ 10,066,520	\$ 9,254,798	\$ 8,686,076	\$ 5,990,304	\$ 5,990,304
Dec 24 2017 - Jan 2018	Remainder Signing Pmt	\$ 24,201,335	\$ 22,413,008	\$ 20,991,484	\$ 19,812,959	\$ 17,117,188	\$ 16,507,386
	Add Pmts (25%)	\$ 11,439,044	\$ 10,219,439	\$ 9,609,637	\$ 8,999,835	\$ 8,999,835	\$ 8,390,033
	Lse Pmts (100%)	\$ 12,762,291	\$ 12,193,569	\$ 11,381,847	\$ 10,813,124	\$ 8,117,353	\$ 8,117,353
Feb - Apr 2018	Remainder Signing Pmt	\$ 24,811,137	\$ 23,022,811	\$ 21,601,286	\$ 20,422,761	\$ 17,725,990	\$ 17,117,188
	Add Pmts (25%)	\$ 12,048,846	\$ 10,829,242	\$ 10,219,439	\$ 9,609,637	\$ 9,609,637	\$ 8,999,835
	Lse Pmts (100%)	\$ 12,762,291	\$ 12,193,569	\$ 11,381,847	\$ 10,813,124	\$ 8,117,353	\$ 8,117,353
May - Jul 2018	Remainder Signing Pmt	\$ 25,420,940	\$ 23,632,613	\$ 22,211,089	\$ 21,032,563	\$ 18,335,792	\$ 17,725,990
	Add Pmts (25%)	\$ 12,658,648	\$ 11,439,044	\$ 10,829,242	\$ 10,219,439	\$ 10,219,439	\$ 9,609,637
	Lse Pmts (100%)	\$ 12,762,291	\$ 12,193,569	\$ 11,381,847	\$ 10,813,124	\$ 8,117,353	\$ 8,117,353
Aug - Oct 2018	Remainder Signing Pmt	\$ 26,030,742	\$ 24,242,415	\$ 22,820,890	\$ 21,642,366	\$ 18,946,595	\$ 18,335,792
	Add Pmts (25%)	\$ 13,263,450	\$ 12,048,846	\$ 11,439,044	\$ 10,829,242	\$ 10,829,242	\$ 10,219,439
	Lse Pmts (100%)	\$ 12,762,291	\$ 12,193,569	\$ 11,381,847	\$ 10,813,124	\$ 8,117,353	\$ 8,117,353
Nov - Dec 23 2018	Remainder Signing Pmt	\$ 26,640,544	\$ 24,852,217	\$ 23,430,693	\$ 22,261,842	\$ 19,556,397	\$ 18,946,595
	Add Pmts (25%)	\$ 13,878,253	\$ 12,658,648	\$ 12,048,846	\$ 11,439,044	\$ 11,439,044	\$ 10,829,242
	Lse Pmts (100%)	\$ 12,762,291	\$ 12,193,569	\$ 11,381,847	\$ 10,813,124	\$ 8,117,353	\$ 8,117,353

EXHIBIT 3-(cont.)

Remainder Signing Payment escalation calculation example

Assumptions:

Navajo Nation execution of Amendment occurs on July 31, 2013
Effective Date is September 15, 2017

Then:

The proper set of numbers to use to calculate the escalated Remainder Signing Payment is found by going across the top of the chart in Exhibit 3 to the column with the heading:

May-Jul 2013

Then go down the first column in Exhibit 3 until the rows that say:

Aug - Oct 2017	Remainder Signing Pmt Addl Pmts (25%) Lse Pmts (100%)
Nov - Dec 23 2017	Remainder Signing Pmt Addl Pmts (25%) Lse Pmts (100%)

The intersection of this column and these rows contain the following values:

\$ 19,676,157
\$ 9,609,637
\$ 10,066,520

This means that the total un-escalated Remainder Signing Payment for the conditions in the assumptions above is \$19,676,157. Of this total, \$9,609,637 is to be escalated as provided in Section VIII.E.1 and \$10,066,520 is to be escalated as provided in Section VIII.E.2.

Additional Assumptions:

CPI for October 2011 = 226.421

CPI for October 2017 = 266

CPI For October 2018= 275

EF = 275/226.421 = 1.215

EF-1 = 0.215

The Remainder Signing Payment is to be paid within 18 months of the Effective Date. Under the assumptions above, the Remainder Signing Payment will be due by March 15, 2019. If it is paid on March 15, 2019, the Remainder Signing Payment would be:

$$\begin{aligned}\text{Total} &= [9,609,637(1+.25(\text{EF}-1))] + [(10,066,520)(\text{EF})] \\ &= [9,609,637(1+.25(.215))] + [(10,066,520)(1.215)] \\ &= [9,609,637(1+.05375)] + [12,230,821] \\ &= [10,126,154] + [12,230,821] \\ &= \$22,356,975\end{aligned}$$

The portion of the Remainder Signing Payment that would be payable to the Community Fund is:

$$\begin{aligned}
 \text{Comm. Fund Amt} &= (.02/(1+.02+.0278))\$ 12,230,821 \\
 &= (.02/1.0478)\$ 12,230,821 \\
 &=.019(\$12,230,821) \\
 &=\$232,385.59
 \end{aligned}$$

The portion of the Remainder Signing Payment that would be payable to the Scholarship Fund is:

$$\begin{aligned}
 \text{Sch. Fund Amt} &= (.0278/1.0478)(\$ 12,230,821) \\
 &= .0265(\$12,230,821) \\
 &=\$324,116.75
 \end{aligned}$$

The portion of the Remainder Signing Payment that would be payable against the Lease would be:

$$\begin{aligned}
 \text{Lease Amt} &= \$12,230,821 - \$232,385.59 - \$324,116.75 \\
 &= \$11,674,318.66
 \end{aligned}$$

If the Remainder Signing Payment was made earlier than 18 months following the Effective Date such that the October, 2018 CPI is not available, but the October, 2017 CPI is available, then the Remainder Signing Payment would be calculated using:

$$\begin{aligned}
 \text{EF} &= 266/226.421 = 1.175 \text{ and} \\
 \text{EF}-1 &= .175
 \end{aligned}$$

EXHIBIT 4

Escalation Calculation Examples

The following calculations are examples of how Payments are escalated in accordance with Section VIII. In the event of a conflict Section VIII governs.

These are the base assumptions for all the examples below: NN approval on February 15, 2013

Non-U.S. Participants Approval April 10, 2014

Oct. 2011 CPI (BI) = 226.421 (actual)

Oct. 2013 CPI (EI) = 233.211 (assumed)

Oct. 2014 CPI (EI) = 235.111 (assumed)

Accrual Period Escalation

Based on the above assumptions, the accrual amount will be paid before May 9, 2014. Therefore, the Extension Index that should be used is the October 2013 CPI value of 233.211 (assumed)

Accrued Lease Payments

= \$6,369,090 for Dec 23, 2012

= \$6,369,090 for Dec 23, 2013

Total accrual lease Payments = \$12,738,180

Escalated Value = (accrued amount)(EF) where $EF = EI/BI$

Escalated Value = $\$12,738,180(233.211/226.421)$

= \$13,120,177.44

Accrued Community Payments

= $\$9,000,000(.757)(0.02)$

= \$136,260 for Dec 23, 2012 and also for Dec. 23, 2013

Total Accrued Community Payments $\$136,260 + \$136,260 = \$272,520$

Escalated Value = (accrued amount)(EF) where $EF = EI/BI$

Escalated Value = $\$272,520(233.211/226.421)$

= \$280,692.43

Accrued Scholarship Payments

= $\$9,000,000(.757)(0.0278)$

= \$189,401.40 for Dec 23, 2012 and also for Dec. 23, 2013

Total Accrued Scholarship Payments $\$189,401.40 + \$189,401.40 = \$378,802.80$

Escalated Value = (accrued amount)(EF) where $EF = EI/BI$

Escalated Value = $\$378,802.80(233.211/226.421)$

= \$390,162.48

Accrued Additional Payments

= \$1,899,672 for Jan/2013, Apr/2013, Jul/2013, Oct/2013, Jan/2014

= \$1,899,672(5)

Total Accrued Additional Payments = \$9,498,360

Escalated Value = (accrued amount) (1+.25(EF-1)) where EF=EI/BI

Escalated Value = \$9,498,360(1+.25(EF-1))

= \$9,498,360(1+.25((233.211/226.421)-1))

= \$9,498,360(1+.25(1.03-1))

= \$9,498,360(1+0.075)

= \$10,210,737

Total Accrued Payment due to the Navajo Nation by May 9, 2014

= \$13,120,177.44 + \$280,692.43 + \$390,162.48 + \$10,210,737

= \$24,001,769.35

Lease Payment following execution by the Navajo Nation and all Non-U.S. Participants

Non-U.S. Participants Lease Payment due on December 23, 2014

Escalated Value = \$6,829,648.84(EF) where EF=EI/BI

= \$6,829,648.84(EF)

= \$6,829,648.84(235.111/226.421)

= \$6,829,648.84(1.038)

= \$7,091,769.62

Additional Payment following execution by the Navajo Nation and all Non-U.S. Participants

Non-U.S. Participants Additional Payment due on April 30, 2014, July 31, 2014, October 31,

2014

= \$1,899,672 (1+.25(EF-1)) where EF=EI/BI

= \$1,899,672(1+.25(233.211/226.421)-1))

= \$1,899,672(1+.25(1.03-1))

= \$1,899,672(1+.25(0.03))

= \$1,899,672(1+.0075)

= \$1,899,672(1.0075)

= \$1,913,919.54

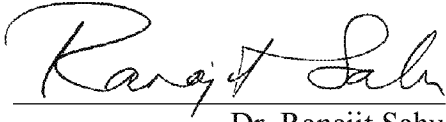
PREPARED AT REQUEST OF COUNSEL

IN THE MATTER OF: NAVAJO GENERATING
STATION, TITLE V PERMIT PETITION

Declaration of
Dr. Ranajit Sahu, Ph. D.

Prepared on behalf of Dine CARE, San Juan Citizens Alliance,
Grand Canyon Trust, Sierra Club

December 27, 2011


Dr. Ranajit Sahu

I. INTRODUCTION

1. This Declaration contains my opinions, conclusions, and reasons therefore;
2. A statement of my qualifications is contained in Appendix A of this Declaration;
3. A list of publications that I have authored within the past 10 years is provided in Appendix A of this Declaration, at the end of my resume;
4. A list of my previous testimony as an expert witness at trial or by deposition in the last four years is contained in Appendix A of this Declaration.
5. The data, documents, and other information I considered in forming my opinions are noted in the body of the Declaration.

The opinions expressed in this Declaration are my own and are based on my knowledge and experience as informed by the data and facts available to me at the time of writing. Should additional relevant or pertinent information become available, I reserve the right to supplement the discussion and findings in this Declaration.

II. BACKGROUND AND EXPERIENCE

I have over twenty years of experience in the fields of environmental, mechanical, and chemical engineering including: program and project management services; design and specification of pollution control equipment; soils and groundwater remediation; combustion engineering evaluations; energy studies; multimedia environmental regulatory compliance (involving statutes and regulations such as the Federal Clean Air Act (CAA) and its Amendments, Clean Water Act (CWA), the Toxics Substances Control Act (TSCA), the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Superfund Amendments and Reauthorization Act (SARA), the Occupational Safety and Health Act (OSHA), the National Environmental Policy Act (NEPA) as well as various related state statutes); transportation air quality impact analysis; multimedia compliance audits; multimedia permitting (including air quality new source review and prevention of significant deterioration permitting, Title V permitting, NPDES permitting for industrial and storm water discharges, RCRA permitting, and others),

multimedia/multi-pathway human health risk assessments for toxics; air dispersion modeling; and regulatory strategy development and support including negotiation of consent agreements and orders.

I have a B.S., M.S., and Ph.D. in Mechanical Engineering, the first from the Indian Institute of Technology (Kharagpur, India) and the latter two from the California Institute of Technology (Caltech) in Pasadena, California. My doctoral research specialization was in the combustion of coal and, among other things, understanding air pollution aspects of coal combustion in power plants.

I have over eighteen years of project management experience and have successfully managed and executed numerous projects. This includes basic and applied research projects, design projects, regulatory compliance projects, permitting projects, energy studies, risk assessment projects, and projects involving the communication of environmental data and information to the public.

I have provided consulting services to numerous private sector, public sector and public interest group clients. My major clients over the past eighteen years have included various steel mills, petroleum refineries, cement companies, aerospace companies, power generation facilities, lawn and garden equipment manufacturers, spa manufacturers, chemical distribution facilities, and various entities in the public sector including EPA, the states of New York, New Jersey, New Mexico, Maryland, Pennsylvania, the U.S. Dept. of Justice, California Department of Toxics Substances Control, and various municipalities. I have performed projects in 48 U.S. states, numerous local jurisdictions and internationally.

Specifically in connection with the matter at hand, I am knowledgeable about coal-fired power plant operations, including operations of particulate control devices such as baghouses, opacity, opacity monitoring systems, regulations such as EPA Part 75 monitoring requirements, and EPA's Startup, Shutdown, and Malfunction policy. My

doctoral research was in the field of coal combustion. I have worked for the last 10 years dealing with all manner of emissions from coal combustion and their control, including particulates. In addition, I have been involved in bag house design, specification, inspection, trouble-shooting, and particulate detection, for the last 15+years.

In addition to consulting, for the past seventeen years I have taught and continue to teach numerous courses in several Southern California universities including UCLA (air pollution), UC Riverside (air pollution, process hazard analysis), and Loyola Marymount University (air pollution, risk assessment, hazardous waste management). In this time period I have also taught at Caltech, my alma mater, at USC (air pollution) and at Cal State Fullerton (transportation and air quality).

I have and continue to provide expert witness services in a number of environmental areas discussed above in both state and federal courts as well as before administrative bodies. Additional details regarding my background and experience can be found in the resume provided as Appendix A of this report.

III. DECLARATION

III.1 Background

In its quarterly reports pursuant to its Title V permit No. NN-ROP-05-06 and its PSD permit, Navajo is required to report performance of stack opacity at each of its three units. Specifically, Navajo is required to report when opacity at any of the three units exceeds 20% over a 6-minute period or exceeds 40% averaged over 6 minutes during its wet scrubber absorber upset transition periods. Opacity is to exclude contributions from condensed, uncombined water droplets.¹ Each unit's stack is equipped with a Continuous

¹ See, for example, Letter to Dr. Deborah Jordan, US EPA and Mr. Steven Etsitty of the Navajo Environmental Protection Administration dated October 31, 2011 regarding Navajo Generating Station FIP - 40 CFR §49.24, Title V Permit to Operate No. NN-ROP-05-06 and PSD Permit Number AZ 08-01 Quarterly Emission Report, dated October 31, 2011, see Exhibit 8 page 1 to Petition.

Opacity Monitor (COMs).² The opacity performance is to be reported based on the COMs data.

Yet, in submitting such reports, including the one referenced above, Navajo does not actually report opacity performance at each unit. Instead, it states that the units are exempt from such reporting because each unit has an operating wet scrubber. For example in the October 31, 2011 report, for unit 1, the report notes that the reporting time was July 1, 2011 through September 30, 2011, and a period of 2175.8 hours or unit operation. The report then proceeds to note that for unit 1 there are no excess opacity emissions because the unit is “exempt (wet stack – scrubber operation)” for the entire 2175.8 hours of unit operation.³ This is reiterated in the next page⁴ where report shows a breakout of the 2175.8 hours for this unit. It is not clear from this report, however, if the time gaps on this page (i.e., from 9/26/11 02:56 through 9/26/11 07:46 and again from 9/26/11 10:44 through 9/27/11 14:05 are due to non-operation of the unit, non-operation of the wet scrubber, or both.

It appears that Navajo’s non-reporting of its actual COMS opacity performance, and its reliance on the blanket exemption regarding inability to accurately monitor opacity, are rooted in its belief that opacity monitoring at the stack, following the wet scrubber (as is the arrangement in each of the three units) is not possible or might result in inaccurate measurements.

I recognize that the primary particulate removal device at each unit at Navajo is a hot-side electrostatic precipitator (ESP) and that some, unspecified amount of particulate removal may occur at the wet scrubber also. I also recognize that there have been prior discussions between Navajo and the US EPA regarding the possibility of installing a COMS after the ESP and before the wet scrubber, in order to avoid any issue associated with monitoring opacity at the stack but that a suitable location for COMS after the ESP could not be determined.

² Ibid, pdf page 4. Each of the COMS is a Teledyne Monitor Labs Inc., Lighthawk Model 560.

³ Ibid, pdf page 7.

⁴ Ibid, pdf page 8.

III.2 Opinion

It is my opinion that Navajo's blanket reliance on the "wet-stack – scrubber operation" exemption in order to avoid proper reporting of opacity statistics, including exceedances of the 20% and/or 40% permit limits is inappropriate for the following reasons.

1. Navajo completely glosses over the conditional nature of the exemption, namely that only condensed, uncombined, water droplets and their contributions to opacity (at the monitor location), can be excluded. I agree that water droplets can interfere with the opacity measurement by the COMS. But, the permit condition specifically limits the exclusion to water droplets alone – and these must be uncombined and condensed. I also note that the Federal Implementation Plan (FIP) governing the plant recognizes the conditional nature of this exemption. For example, it states that "[T]herefore, in the final rule excess opacity due to uncombined water droplets in the stack does not constitute an exceedance, but it will be reported on the quarterly excess emissions reports."⁵ The FIP also notes that "EPA agrees with SRP's comments that when (emphasis added) the stack is saturated and has uncombined water droplets, the Continuous Opacity Monitoring Systems (COMs) cannot correctly read the opacity..."⁶

2. Each of the Navajo units burns coal. Coal contains sulfur, which, during the combustion process becomes oxidized to sulfur dioxide (SO₂) and also to sulfur trioxide (SO₃). The SO₃ combines with water vapor, present as a result of combustion of hydrogen in coal, and the result is sulfuric acid (H₂SO₄). It is well known that the sulfuric acid mist can condense into fine condensable particulate after the ESP and that most wet scrubbers are not designed to remove sulfuric acid mist. I have seen no design information on any of the wet scrubbers at the Navajo units that leads me to believe that they would be removing all of the sulfuric acid mist, present in fine condensable form, generally in the size range of 2.5 microns or smaller (PM_{2.5}). Thus, it is quite likely that a significant amount of the water droplets in the stack would be associated with sulfuric acid. In addition, there are other condensable organics that are formed as a result of coal combustion which are not designed to be removed in either the ESP or the scrubber.

⁵ 75 Fed. Reg. 10175, March 5, 2010.

⁶ 75 Fed. Reg. 10177, March 5, 2010.

They too would be present in the condensable phase in the stack. Thus, assuming that all of the water droplets would be uncombined, as Navajo has implicitly assumed, is incorrect. Thus, without carefully separating out the contributions of the water droplets into those that are truly uncombined and those which are associated with other contaminants, Navajo cannot simply assume that all water droplets are uncombined.

3. Navajo has also not demonstrated that uncombined water droplets would be present at the location of the COMs in each stack. The COMs are located roughly at 500 feet elevation in the stack. As a letter from the Salt River Project (SRP) in 1996 noted “There will be opacity monitors installed in the replacement chimneys 501 feet above grade....”⁷ The exhaust gases from the scrubber would have had ample opportunity to condense on the walls of the stack before the gases reach the level at which the COMs are located. I did not see any calculations or discussion demonstrating that any condensed water droplets would actually be present at the location of the COMs, much less under all operating conditions. Thus, simply assuming that that is the case, for every single hour that the scrubber is in operation is not supportable. Even the owners of Navajo have previously recognized that only under some conditions can the opacity be affected. In a letter to the EPA dated May 22, 1997, SRP noted that “[H]owever, the opacity readings taken in the stack approach 80% opacity under some operating conditions due to the water vapor in the stack caused by the operation of the wet scrubber.”⁸ In fact, even earlier, SRP clearly understood that the issue of obtaining an exemption from opacity monitoring requirements is a conditional one, dependent on (a) whether or not condensed water vapor is present and (b) if present, if it interferes with the accuracy of the opacity measurements. As SRP itself notes “[T]he location downstream of the particulate removal equipment may contain condensed water vapor, and if condensed water vapor interferes with the accuracy of opacity measurements, the Salt River Project may apply for an exemption from opacity monitoring requirements as specified in 40 CFR §75.14(b)....”⁹ (emphasis added) Yet, now, in its quarterly reports, SRP simply assumes that these conditions are satisfied, with no analysis or demonstration. That is incorrect.

⁷ Letter dated January 30, 1996 from SRP to EPA (Mr. Steve Frey), page 2, Exhibit 6 to Petition.

⁸ Letter dated May 22, 1997 from SRP to EPA (Ms. Leslie Guinan), Exhibit 6 to Petition.

⁹ Letter dated January 30, 1996 from SRP to EPA (Mr. Steve Frey), page 2, Exhibit 6 to Petition.

4. Even if water droplets, uncombined with other substances make it as far as the location of the COMs, it is possible to consider means to locate the COMs such that they do not interact with such droplets. For example, the COMs could be located in a slip-stream of the exhaust gases, which could be maintained at a temperature greater than the dew point of the exhaust gases (thereby avoiding any condensation). The COMs would then have no interference from water droplets. Of course, arguably the opacity readings would be biased low in this instance because condensable particulates and their contribution would not be measured. Nonetheless, opacity due to filterable particulates could be measured in this manner.

5. I know of at least three other coal-fired units, which use COMs to measure opacity and which have wet scrubbers. This demonstrates that COMs can be properly designed, located, and used even in units with wet scrubbers. These units include Unit 2 at the Trimble plant located in Trimble County, Kentucky¹⁰ as well as Units 1 and 2 of the Craig station located in Moffat County, Colorado.¹¹ In the time available to prepare this Declaration, I did not have the opportunity to an exhaustive search of all coal-fired units in the US or abroad, which have wet scrubbers and which also have COMs located after the wet scrubber, in the stack. I am reasonably certain it is not just limited to the three units I have provided as examples.

6. It is likely that opacity at the Navajo units are exceeding 20% when the units are in operation, reflecting on the particulate removal capabilities of the ESP and the scrubber at these units. For example, for a period of approximately 11 months (from 11/1/94 through 10/16/95), SRP analyzed opacity at each of the three units, prior to the installation of the wet scrubbers.¹³ It found that at Unit 1 opacities were 21% or greater 18.3% of the time; at Unit 2 opacities were 21% or greater 11.12% of the time; and at Unit 3, opacities were 21% or greater 21.53% of the time.¹⁴ Thus, historic monitoring

¹⁰ See, for example, Final Air Quality Permit # V-02-043 Revision 2 issued to the Louisville Gas and Electric Company on June 20, 2003. Page 27 states that the unit is equipped with a wet scrubber (WFGD) and Page 29, Condition 4(a) states the requirement for a continuous opacity monitor. Exhibit 11 to Petition.

¹¹ See, for example, Colorado Department of Public Health and Environment (CDPHE) Operating Permit #96OPMF155 issued to Units 1 and 2 of the Craig Station, May 1, 2005. The permit notes that Units 1 and 2 use wet scrubbers to control SO₂ (see p. 4) and that opacity is to be monitored using COMs (see p. 11, p. 19) Exhibit 12 to Petition.

¹³ Letter dated October 23, 1995 from SRP to EPA (Ms. Leslie Guinan), pages 2-3 Exhibit 6 to Petition..

¹⁴ Ibid, Exhibit .

shows that each unit exceeds its 20% opacity limit a significant percentage of time. By simply relying on the exemption from reporting opacity statistics as Navajo has done, it is more than likely that it is masking significant periods of exceedances of the 20% opacity standard at each of the three units.

APPENDIX A

RANAJIT (RON) SAHU, Ph.D, QEP, CEM (Nevada)

CONSULTANT, ENVIRONMENTAL AND ENERGY ISSUES

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Phone: 626-382-0001

e-mail (preferred): sahuron@earthlink.net

EXPERIENCE SUMMARY

Dr. Sahu has over twenty one years of experience in the fields of environmental, mechanical, and chemical engineering including: program and project management services; design and specification of pollution control equipment; soils and groundwater remediation; combustion engineering evaluations; energy studies; multimedia environmental regulatory compliance (involving statutes and regulations such as the Federal CAA and its Amendments, Clean Water Act, TSCA, RCRA, CERCLA, SARA, OSHA, NEPA as well as various related state statutes); transportation air quality impact analysis; multimedia compliance audits; multimedia permitting (including air quality NSR/PSD permitting, Title V permitting, NPDES permitting for industrial and storm water discharges, RCRA permitting, etc.), multimedia/multi-pathway human health risk assessments for toxics; air dispersion modeling; and regulatory strategy development and support including negotiation of consent agreements and orders.

He has over nineteen years of project management experience and has successfully managed and executed numerous projects in this time period. This includes basic and applied research projects, design projects, regulatory compliance projects, permitting projects, energy studies, risk assessment projects, and projects involving the communication of environmental data and information to the public. Notably, he has successfully managed a complex soils and groundwater remediation project with a value of over \$140 million involving soils characterization, development and implementation of the remediation strategy, regulatory and public interactions and other challenges.

He has provided consulting services to numerous private sector, public sector and public interest group clients. His major clients over the past seventeen years include various steel mills, petroleum refineries, cement companies, aerospace companies, power generation facilities, lawn and garden equipment manufacturers, spa manufacturers, chemical distribution facilities, and various entities in the public sector including EPA, the US Dept. of Justice, California DTSC, various municipalities, etc.). Dr. Sahu has performed projects in over 44 states, numerous local jurisdictions and internationally.

Dr. Sahu's experience includes various projects in relation to industrial waste water as well as storm water pollution compliance include obtaining appropriate permits (such as point source NPDES permits) as well development of plans, assessment of remediation technologies, development of monitoring reports, and regulatory interactions.

In addition to consulting, Dr. Sahu has taught and continues to teach numerous courses in several Southern California universities including UCLA (air pollution), UC Riverside (air pollution, process hazard analysis), and Loyola Marymount University (air pollution, risk assessment, hazardous waste management) for the past seventeen years. In this time period he has also taught at Caltech, his alma mater and at USC (air pollution) and Cal State Fullerton (transportation and air quality).

Dr. Sahu has and continues to provide expert witness services in a number of environmental areas discussed above in both state and Federal courts as well as before administrative bodies (please see Annex A).

EXPERIENCE RECORD

- 2000-present **Independent Consultant.** Providing a variety of private sector (industrial companies, land development companies, law firms, etc.) public sector (such as the US Department of Justice) and public interest group clients with project management, air quality consulting, waste remediation and management consulting, as well as regulatory and engineering support consulting services.
- 1995-2000 Parsons ES, **Associate, Senior Project Manager and Department Manager for** Air Quality/Geosciences/Hazardous Waste Groups, Pasadena. Responsible for the management of a group of approximately 24 air quality and environmental professionals, 15 geoscience, and 10 hazardous waste professionals providing full-service consulting, project management, regulatory compliance and A/E design assistance in all areas.
- Parsons ES, **Manager for Air Source Testing Services.** Responsible for the management of 8 individuals in the area of air source testing and air regulatory permitting projects located in Bakersfield, California.
- 1992-1995 Engineering-Science, Inc. **Principal Engineer and Senior Project Manager** in the air quality department. Responsibilities included multimedia regulatory compliance and permitting (including hazardous and nuclear materials), air pollution engineering (emissions from stationary and mobile sources, control of criteria and air toxics, dispersion modeling, risk assessment, visibility analysis, odor analysis), supervisory functions and project management.
- 1990-1992 Engineering-Science, Inc. **Principal Engineer and Project Manager** in the air quality department. Responsibilities included permitting, tracking regulatory issues, technical analysis, and supervisory functions on numerous air, water, and hazardous waste projects. Responsibilities also include client and agency interfacing, project cost and schedule control, and reporting to internal and external upper management regarding project status.
- 1989-1990 Kinetics Technology International, Corp. **Development Engineer.** Involved in thermal engineering R&D and project work related to low-NOx ceramic radiant burners, fired heater NOx reduction, SCR design, and fired heater retrofitting.
- 1988-1989 Heat Transfer Research, Inc. **Research Engineer.** Involved in the design of fired heaters, heat exchangers, air coolers, and other non-fired equipment. Also did research in the area of heat exchanger tube vibrations.

EDUCATION

- 1984-1988 Ph.D., Mechanical Engineering, California Institute of Technology (Caltech), Pasadena, CA.
- 1984 M. S., Mechanical Engineering, Caltech, Pasadena, CA.
- 1978-1983 B. Tech (Honors), Mechanical Engineering, Indian Institute of Technology (IIT) Kharagpur, India

TEACHING EXPERIENCE

Caltech

"Thermodynamics," Teaching Assistant, California Institute of Technology, 1983, 1987.

"Air Pollution Control," Teaching Assistant, California Institute of Technology, 1985.

"Caltech Secondary and High School Saturday Program," - taught various mathematics (algebra through calculus) and science (physics and chemistry) courses to high school students, 1983-1989.

"Heat Transfer," - taught this course in the Fall and Winter terms of 1994-1995 in the Division of Engineering and Applied Science.

"Thermodynamics and Heat Transfer," Fall and Winter Terms of 1996-1997.

U.C. Riverside, Extension

"Toxic and Hazardous Air Contaminants," University of California Extension Program, Riverside, California. Various years since 1992.

"Prevention and Management of Accidental Air Emissions," University of California Extension Program, Riverside, California. Various years since 1992.

"Air Pollution Control Systems and Strategies," University of California Extension Program, Riverside, California, Summer 1992-93, Summer 1993-1994.

"Air Pollution Calculations," University of California Extension Program, Riverside, California, Fall 1993-94, Winter 1993-94, Fall 1994-95.

"Process Safety Management," University of California Extension Program, Riverside, California. Various years since 1992-2010.

"Process Safety Management," University of California Extension Program, Riverside, California, at SCAQMD, Spring 1993-94.

"Advanced Hazard Analysis - A Special Course for LEPCs," University of California Extension Program, Riverside, California, taught at San Diego, California, Spring 1993-1994.

"Advanced Hazardous Waste Management" University of California Extension Program, Riverside, California. 2005.

Loyola Marymount University

"Fundamentals of Air Pollution - Regulations, Controls and Engineering," Loyola Marymount University, Dept. of Civil Engineering. Various years since 1993.

"Air Pollution Control," Loyola Marymount University, Dept. of Civil Engineering, Fall 1994.

"Environmental Risk Assessment," Loyola Marymount University, Dept. of Civil Engineering. Various years since 1998.

"Hazardous Waste Remediation" Loyola Marymount University, Dept. of Civil Engineering. Various years since 2006.

University of Southern California

"Air Pollution Controls," University of Southern California, Dept. of Civil Engineering, Fall 1993, Fall 1994.

"Air Pollution Fundamentals," University of Southern California, Dept. of Civil Engineering, Winter 1994.

University of California, Los Angeles

"Air Pollution Fundamentals," University of California, Los Angeles, Dept. of Civil and Environmental Engineering, Spring 1994, Spring 1999, Spring 2000, Spring 2003, Spring 2006, Spring 2007, Spring 2008, Spring 2009.

International Programs

"Environmental Planning and Management," 5 week program for visiting Chinese delegation, 1994.

"Environmental Planning and Management," 1 day program for visiting Russian delegation, 1995.

"Air Pollution Planning and Management," IEP, UCR, Spring 1996.

“Environmental Issues and Air Pollution,” IEP, UCR, October 1996.

PROFESSIONAL AFFILIATIONS AND HONORS

President of India Gold Medal, IIT Kharagpur, India, 1983.

Member of the Alternatives Assessment Committee of the Grand Canyon Visibility Transport Commission, established by the Clean Air Act Amendments of 1990, 1992-present.

American Society of Mechanical Engineers: Los Angeles Section Executive Committee, Heat Transfer Division, and Fuels and Combustion Technology Division, 1987-present.

Air and Waste Management Association, West Coast Section, 1989-present.

PROFESSIONAL CERTIFICATIONS

EIT, California (# XE088305), 1993.

REA I, California (#07438), 2000.

Certified Permitting Professional, South Coast AQMD (#C8320), since 1993.

QEP, Institute of Professional Environmental Practice, since 2000.

CEM, State of Nevada (#EM-1699). Expiration 10/07/2011.

PUBLICATIONS (PARTIAL LIST)

"Physical Properties and Oxidation Rates of Chars from Bituminous Coals," with Y.A. Levendis, R.C. Flagan and G.R. Gavalas, *Fuel*, **67**, 275-283 (1988).

"Char Combustion: Measurement and Analysis of Particle Temperature Histories," with R.C. Flagan, G.R. Gavalas and P.S. Northrop, *Comb. Sci. Tech.* **60**, 215-230 (1988).

"On the Combustion of Bituminous Coal Chars," PhD Thesis, California Institute of Technology (1988).

"Optical Pyrometry: A Powerful Tool for Coal Combustion Diagnostics," *J. Coal Quality*, **8**, 17-22 (1989).

"Post-Ignition Transients in the Combustion of Single Char Particles," with Y.A. Levendis, R.C. Flagan and G.R. Gavalas, *Fuel*, **68**, 849-855 (1989).

"A Model for Single Particle Combustion of Bituminous Coal Char." Proc. ASME National Heat Transfer Conference, Philadelphia, **HTD-Vol. 106**, 505-513 (1989).

"Discrete Simulation of Cenospheric Coal-Char Combustion," with R.C. Flagan and G.R. Gavalas, *Combust. Flame*, **77**, 337-346 (1989).

"Particle Measurements in Coal Combustion," with R.C. Flagan, in "**Combustion Measurements**" (ed. N. Chigier), Hemisphere Publishing Corp. (1991).

"Cross Linking in Pore Structures and Its Effect on Reactivity," with G.R. Gavalas in preparation.

"Natural Frequencies and Mode Shapes of Straight Tubes," Proprietary Report for Heat Transfer Research Institute, Alhambra, CA (1990).

"Optimal Tube Layouts for Kamui SL-Series Exchangers," with K. Ishihara, Proprietary Report for Kamui Company Limited, Tokyo, Japan (1990).

"HTRI Process Heater Conceptual Design," Proprietary Report for Heat Transfer Research Institute, Alhambra, CA (1990).

"Asymptotic Theory of Transonic Wind Tunnel Wall Interference," with N.D. Malmuth and others, Arnold Engineering Development Center, Air Force Systems Command, USAF (1990).

"Gas Radiation in a Fired Heater Convection Section," Proprietary Report for Heat Transfer Research Institute, College Station, TX (1990).

"Heat Transfer and Pressure Drop in NTIW Heat Exchangers," Proprietary Report for Heat Transfer Research Institute, College Station, TX (1991).

"NO_x Control and Thermal Design," Thermal Engineering Tech Briefs, (1994).

"From Purchase of Landmark Environmental Insurance to Remediation: Case Study in Henderson, Nevada," with Robin E. Bain and Jill Quillin, presented at the AQMA Annual Meeting, Florida, 2001.

"The Jones Act Contribution to Global Warming, Acid Rain and Toxic Air Contaminants," with Charles W. Botsford, presented at the AQMA Annual Meeting, Florida, 2001.

PRESENTATIONS (PARTIAL LIST)

"Pore Structure and Combustion Kinetics - Interpretation of Single Particle Temperature-Time Histories," with P.S. Northrop, R.C. Flagan and G.R. Gavalas, presented at the AIChE Annual Meeting, New York (1987).

"Measurement of Temperature-Time Histories of Burning Single Coal Char Particles," with R.C. Flagan, presented at the American Flame Research Committee Fall International Symposium, Pittsburgh, (1988).

"Physical Characterization of a Cenospheric Coal Char Burned at High Temperatures," with R.C. Flagan and G.R. Gavalas, presented at the Fall Meeting of the Western States Section of the Combustion Institute, Laguna Beach, California (1988).

"Control of Nitrogen Oxide Emissions in Gas Fired Heaters - The Retrofit Experience," with G. P. Croce and R. Patel, presented at the International Conference on Environmental Control of Combustion Processes (Jointly sponsored by the American Flame Research Committee and the Japan Flame Research Committee), Honolulu, Hawaii (1991).

"Air Toxics - Past, Present and the Future," presented at the Joint AIChE/AAEE Breakfast Meeting at the AIChE 1991 Annual Meeting, Los Angeles, California, November 17-22 (1991).

"Air Toxics Emissions and Risk Impacts from Automobiles Using Reformulated Gasolines," presented at the Third Annual Current Issues in Air Toxics Conference, Sacramento, California, November 9-10 (1992).

"Air Toxics from Mobile Sources," presented at the Environmental Health Sciences (ESE) Seminar Series, UCLA, Los Angeles, California, November 12, (1992).

"Kilns, Ovens, and Dryers - Present and Future," presented at the Gas Company Air Quality Permit Assistance Seminar, Industry Hills Sheraton, California, November 20, (1992).

"The Design and Implementation of Vehicle Scrapping Programs," presented at the 86th Annual Meeting of the Air and Waste Management Association, Denver, Colorado, June 12, 1993.

"Air Quality Planning and Control in Beijing, China," presented at the 87th Annual Meeting of the Air and Waste Management Association, Cincinnati, Ohio, June 19-24, 1994.

Annex A

Expert Litigation Support

1. Matters for which Dr. Sahu has have provided depositions and affidavits/expert reports include:

- (a) Deposition on behalf of Rocky Mountain Steel Mills, Inc. located in Pueblo, Colorado – dealing with the manufacture of steel in mini-mills including methods of air pollution control and BACT in steel mini-mills and opacity issues at this steel mini-mill
- (b) Affidavit for Rocky Mountain Steel Mills, Inc. located in Pueblo Colorado – dealing with the technical uncertainties associated with night-time opacity measurements in general and at this steel mini-mill.
- (c) Expert reports and depositions (2/28/2002 and 3/1/2002; 12/2/2003 and 12/3/2003; 5/24/2004) on behalf of the US Department of Justice in connection with the Ohio Edison NSR Cases. *United States, et al. v. Ohio Edison Co., et al.*, C2-99-1181 (S.D. Ohio).
- (d) Expert reports and depositions (5/23/2002 and 5/24/2002) on behalf of the US Department of Justice in connection with the Illinois Power NSR Case. *United States v. Illinois Power Co., et al.*, 99-833-MJR (S.D. Ill.).
- (e) Expert reports and depositions (11/25/2002 and 11/26/2002) on behalf of the US Department of Justice in connection with the Duke Power NSR Case. *United States, et al. v. Duke Energy Corp.*, 1:00-CV-1262 (M.D.N.C.).
- (f) Expert reports and depositions (10/6/2004 and 10/7/2004; 7/10/2006) on behalf of the US Department of Justice in connection with the American Electric Power NSR Cases. *United States, et al. v. American Electric Power Service Corp., et al.*, C2-99-1182, C2-99-1250 (S.D. Ohio).
- (g) Affidavit (March 2005) on behalf of the Minnesota Center for Environmental Advocacy and others in the matter of the Application of Heron Lake BioEnergy LLC to construct and operate an ethanol production facility – submitted to the Minnesota Pollution Control Agency.
- (h) Expert reports and depositions (10/31/2005 and 11/1/2005) on behalf of the US Department of Justice in connection with the East Kentucky Power Cooperative NSR Case. *United States v. East Kentucky Power Cooperative, Inc.*, 5:04-cv-00034-KSF (E.D. KY).
- (i) Deposition (10/20/2005) on behalf of the US Department of Justice in connection with the Cinergy NSR Case. *United States, et al. v. Cinergy Corp., et al.*, IP 99-1693-C-M/S (S.D. Ind.).
- (j) Affidavits and deposition on behalf of Basic Management Inc. (BMI) Companies in connection with the BMI vs. USA remediation cost recovery Case.

- (k) Expert report on behalf of Penn Future and others in the Cambria Coke plant permit challenge in Pennsylvania.
- (l) Expert report on behalf of the Appalachian Center for the Economy and the Environment and others in the Western Greenbrier permit challenge in West Virginia.
- (m) Expert report, deposition (via telephone on January 26, 2007) on behalf of various Montana petitioners (Citizens Awareness Network (CAN), Women's Voices for the Earth (WVE) and the Clark Fork Coalition (CFC)) in the Thompson River Cogeneration LLC Permit No. 3175-04 challenge.
- (n) Expert report and deposition (2/2/07) on behalf of the Texas Clean Air Cities Coalition at the Texas State Office of Administrative Hearings (SOAH) in the matter of the permit challenges to TXU Project Apollo's eight new proposed PRB-fired PC boilers located at seven TX sites.
- (o) Expert testimony (July 2007) on behalf of the Izaak Walton League of America and others in connection with the acquisition of power by Xcel Energy from the proposed Gascoyne Power Plant – at the State of Minnesota, Office of Administrative Hearings for the Minnesota PUC (MPUC No. E002/CN-06-1518; OAH No. 12-2500-17857-2).
- (p) Affidavit (July 2007) Comments on the Big Cajun I Draft Permit on behalf of the Sierra Club – submitted to the Louisiana DEQ.
- (q) Expert reports and deposition (12/13/2007) on behalf of Commonwealth of Pennsylvania – Dept. of Environmental Protection, State of Connecticut, State of New York, and State of New Jersey (Plaintiffs) in connection with the Allegheny Energy NSR Case. *Plaintiffs v. Allegheny Energy Inc., et al.*, 2:05cv0885 (W.D. Pennsylvania).
- (r) Expert reports and pre-filed testimony before the Utah Air Quality Board on behalf of Sierra Club in the Sevier Power Plant permit challenge.
- (s) Expert reports and deposition (October 2007) on behalf of MTD Products Inc., in connection with General Power Products, LLC v MTD Products Inc., 1:06 CVA 0143 (S.D. Ohio, Western Division)
- (t) Experts report and deposition (June 2008) on behalf of Sierra Club and others in the matter of permit challenges (Title V: 28.0801-29 and PSD: 28.0803-PSD) for the Big Stone II unit, proposed to be located near Milbank, South Dakota.
- (u) Expert reports, affidavit, and deposition (August 15, 2008) on behalf of Earthjustice in the matter of air permit challenge (CT-4631) for the Basin Electric Dry Fork station, under construction near Gillette, Wyoming before the Environmental Quality Council of the State of Wyoming.
- (v) Affidavit/Declaration and Expert Report on behalf of NRDC and the Southern Environmental Law Center in the matter of the air permit challenge for Duke Cliffside Unit 6, under construction in North Carolina.
- (w) Dominion Wise County MACT Declaration (August 2008)
- (x) Expert Report on behalf of Sierra Club for the Green Energy Resource Recovery Project, MACT Analysis (June 13, 2008).

- (y) Expert Report on behalf of Sierra Club and the Environmental Integrity Project in the matter of the air permit challenge for NRG Limestone's proposed Unit 3 in Texas (February 2009).
- (z) Expert Report and deposition on behalf of MTD Products, Inc., in the matter of Alice Holmes and Vernon Holmes v. Home Depot USA, Inc., et al. (June 2009, July 2009).
- (aa) Expert Report on behalf of Sierra Club and the Southern Environmental Law Center in the matter of the air permit challenge for Santee Cooper's proposed Pee Dee plant in South Carolina (August 2009).
- (bb) Statements (May 2008 and September 2009) on behalf of the Minnesota Center for Environmental Advocacy to the Minnesota Pollution Control Agency in the matter of the Minnesota Haze State Implementation Plans.
- (cc) Expert Report (August 2009) and Deposition (October 2009) on behalf of Environmental Defense, in the matter of permit challenges to the proposed Las Brisas coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH).
- (dd) Deposition (October 2009) on behalf of Environmental Defense and others, in the matter of challenges to the proposed Coletto Creek coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH). (October 2009).
- (ee) Expert Report, Rebuttal Report (September 2009) and Deposition (October 2009) on behalf of the Sierra Club, in the matter of challenges to the proposed Medicine Bow Fuel and Power IGL plant in Cheyenne, Wyoming.
- (ff) Expert report (December 2009), Rebuttal reports (May 2010 and June 2010) and depositions (June 2010) on behalf of the US Department of Justice in connection with the Alabama Power Company NSR Case. *United States v. Alabama Power Company*, CV-01-HS-152-S (Northern District of Alabama, Southern Division).
- (gg) Prefiled testimony (October 2009) and Deposition (December 2009) on behalf of Environmental Defense and others, in the matter of challenges to the proposed White Stallion Energy Center coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH).
- (hh) Deposition (October 2009) on behalf of Environmental Defense and others, in the matter of challenges to the proposed Tenaska coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH). (April 2010).
- (ii) Written Direct Testimony (July 2010) and Written Rebuttal Testimony (August 2010) on behalf of the State of New Mexico Environment Department in the matter of Proposed Regulation 20.2.350 NMAC – *Greenhouse Gas Cap and Trade Provisions*, No. EIB 10-04 (R), to the State of New Mexico, Environmental Improvement Board.
- (jj) Expert report (August 2010) and Rebuttal Expert Report (October 2010) on behalf of the US Department of Justice in connection with the Louisiana Generating NSR Case. *United States v. Louisiana Generating, LLC*, 09-CV100-RET-CN (Middle District of Louisiana).

- (kk) Declaration (August 2010) on behalf of the US EPA and US Department of Justice in the matter of DTE Energy Company, Detroit, MI (Monroe Unit 2).
- (ll) Expert Report and Deposition (August 2010) as well as Affidavit (September 2010) on behalf of Kentucky Waterways Alliance, Sierra Club, and Valley Watch in the matter of challenges to the NPDES permit issued for the Trimble County power plant by the Kentucky Energy and Environment Cabinet to Louisville Gas and Electric, File No. DOW-41106-047.
- (mm) Expert Report (August 2010) and Rebuttal Expert Report (September 2010) on behalf of Wild Earth Guardians in the matter of opacity exceedances and monitor downtime at the Public Service Company of Colorado (Xcel)'s Cherokee power plant. No. 09-cv-1862 (D. Colo.).
- (nn) Written Direct Expert Testimony (August 2010) on behalf of Fall-Line Alliance for a Clean Environment and others in the matter of the PSD Air Permit for Plant Washington issued by Georgia DNR at the Office of State Administrative Hearing, State of Georgia (OSAH-BNR-AQ-1031707-98-WALKER).
- (oo) Deposition (August 2010) on behalf of Environmental Defense, in the matter of the remanded permit challenge to the proposed Las Brisas coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH).
- (pp) Expert Report, Supplemental/Rebuttal Expert Report, and Declarations (October 2010) on behalf of New Mexico Environment Department (Plaintiff-Intervenor), Grand Canyon Trust and Sierra Club (Plaintiffs) in the matter of Public Service Company of New Mexico (PNM)'s Mercury Report for the San Juan Generating Station, CIVIL NO. 1:02-CV-0552 BB/ATC (ACE). US District Court for the District of New Mexico.
- (qq) Comment Report (October 2010) on the Draft Permit Issued by the Kansas DHE to Sunflower Electric for Holcomb Unit 2. Prepared on behalf of the Sierra Club and Earthjustice.
- (rr) Expert Report (October 2010) and Rebuttal Expert Report (November 2010) (BART Determinations for PSCo Hayden and CSU Martin Drake units) to the Colorado Air Quality Commission on behalf of Coalition of Environmental Organizations.
- (ss) Expert Report (November 2010) (BART Determinations for TriState Craig Units, CSU Nixon Unit, and PRPA Rawhide Unit) to the Colorado Air Quality Commission on behalf of Coalition of Environmental Organizations.
- (tt) Comment Report (December 2010) on the Pennsylvania Department of Environmental Protection (PADEP)'s Proposal to grant Plan Approval for the Wellington Green Energy Resource Recovery Facility on behalf of the Chesapeake Bay Foundation, Group Against Smog and Pollution (GASP), National Park Conservation Association (NPCA), and the Sierra Club.
- (uu) Written Expert Testimony (January 2011) to the Georgia Office of State Administrative Hearings (OSAH) in the matter of Minor Source HAPs status for the proposed Longleaf Energy Associates power plant (OSAH-BNR-AQ-1115157-60-HOWELLS) on behalf of the Friends of the Chattahoochee and the Sierra Club).

2. Occasions where Dr. Sahu has provided oral testimony at trial or in similar proceedings include the following:

- (vv) In February, 2002, provided expert witness testimony on emissions data on behalf of Rocky Mountain Steel Mills, Inc. in Denver District Court.
- (ww) In February 2003, provided expert witness testimony on regulatory framework and emissions calculation methodology issues on behalf of the US Department of Justice in the Ohio Edison NSR Case in the US District Court for the Southern District of Ohio.
- (xx) In June 2003, provided expert witness testimony on regulatory framework, emissions calculation methodology, and emissions calculations on behalf of the US Department of Justice in the Illinois Power NSR Case in the US District Court for the Southern District of Illinois.
- (yy) In August 2006, provided expert witness testimony regarding power plant emissions and BACT issues on a permit challenge (Western Greenbrier) on behalf of the Appalachian Center for the Economy and the Environment in West Virginia.
- (zz) In May 2007, provided expert witness testimony regarding power plant emissions and BACT issues on a permit challenge (Thompson River Cogeneration) on behalf of various Montana petitioners (Citizens Awareness Network (CAN), Women's Voices for the Earth (WVE) and the Clark Fork Coalition (CFC)) before the Montana Board of Environmental Review.
- (aaa) In October 2007, provided expert witness testimony regarding power plant emissions and BACT issues on a permit challenge (Sevier Power Plant) on behalf of the Sierra Club before the Utah Air Quality Board.
- (bbb) In August 2008, provided expert witness testimony regarding power plant emissions and BACT issues on a permit challenge (Big Stone Unit II) on behalf of the Sierra Club and Clean Water before the South Dakota Board of Minerals and the Environment.
- (ccc) In February 2009, provided expert witness testimony regarding power plant emissions and BACT issues on a permit challenge (Santee Cooper Pee Dee units) on behalf of the Sierra Club and the Southern Environmental Law Center before the South Carolina Board of Health and Environmental Control.
- (ddd) In February 2009, provided expert witness testimony regarding power plant emissions, BACT issues and MACT issues on a permit challenge (NRG Limestone Unit 3) on behalf of the Sierra Club and the Environmental Integrity Project before the Texas State Office of Administrative Hearings (SOAH) Administrative Law Judges.
- (eee) In November 2009, provided expert witness testimony regarding power plant emissions, BACT issues and MACT issues on a permit challenge (Las Brisas Energy Center) on behalf of the Environmental Defense Fund before the Texas State Office of Administrative Hearings (SOAH) Administrative Law Judges.

- (fff) In February 2010, provided expert witness testimony regarding power plant emissions, BACT issues and MACT issues on a permit challenge (White Stallion Energy Center) on behalf of the Environmental Defense Fund before the Texas State Office of Administrative Hearings (SOAH) Administrative Law Judges.
- (ggg) In September 2010 provided oral trial testimony on behalf of Commonwealth of Pennsylvania – Dept. of Environmental Protection, State of Connecticut, State of New York, State of Maryland, and State of New Jersey (Plaintiffs) in connection with the Allegheny Energy NSR Case in US District Court in the Western District of Pennsylvania. *Plaintiffs v. Allegheny Energy Inc., et al.*, 2:05cv0885 (W.D. Pennsylvania).
- (hhh) Oral Direct and Rebuttal Expert Testimony (September 2010) on behalf of Fall-Line Alliance for a Clean Environment and others in the matter of the PSD Air Permit for Plant Washington issued by Georgia DNR at the Office of State Administrative Hearing, State of Georgia (OSAH-BNR-AQ-1031707-98-WALKER).
- (iii) Oral Testimony (September 2010) on behalf of the State of New Mexico Environment Department in the matter of Proposed Regulation 20.2.350 NMAC – *Greenhouse Gas Cap and Trade Provisions*, No. EIB 10-04 (R), to the State of New Mexico, Environmental Improvement Board.
- (jjj) Oral Testimony (October 2010) regarding mercury and total PM/PM10 emissions and other issues on a remanded permit challenge (Las Brisas Energy Center) on behalf of the Environmental Defense Fund before the Texas State Office of Administrative Hearings (SOAH) Administrative Law Judges.
- (kkk) Oral Testimony (November 2010) regarding BART for PSCo Hayden, CSU Martin Drake units before the Colorado Air Quality Commission on behalf of the Coalition of Environmental Organizations.
- (lll) Oral Testimony (December 2010) regarding BART for TriState Craig Units, CSU Nixon Unit, and PRPA Rawhide Unit) before the Colorado Air Quality Commission on behalf of the Coalition of Environmental Organizations.
- (mmm) Deposition (December 2010) on behalf of the US Department of Justice in connection with the Louisiana Generating NSR Case. *United States v. Louisiana Generating, LLC*, 09-CV100-RET-CN (Middle District of Louisiana).
- (nnn) Deposition (February 2011) on behalf of Wild Earth Guardians in the matter of opacity exceedances and monitor downtime at the Public Service Company of Colorado (Xcel)'s Cherokee power plant. No. 09-cv-1862 (D. Colo.).
- (ooo) Oral Expert Testimony (February 2011) to the Georgia Office of State Administrative Hearings (OSAH) in the matter of Minor Source HAPs status for the proposed Longleaf Energy Associates power plant (OSAH-BNR-AQ-1115157-60-HOWELLS) on behalf of the Friends of the Chattahoochee and the Sierra Club).